FORESTRY PARTNERSHIP PROJECT
RESEARCH SYNTHESIS REPORT

A synthesis of research papers and progress reports produced during the project period (1996 - 2002)

FORESTRY PARTNERSHIP PROJECT
CARE NEPAL

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Executive Summary

This report is a synthesis of 28 research papers generated under the applied research component of the Environment and Forest Enterprise Activity. EFEA's overall goal was *"to increase rural household incomes through sustainable private sector agriculture and forestry enterprises."* Under EFEA, funded by USAID, CARE Nepal implemented the Forestry Partnership Project (FPP) to:

1) Increase the sustainable management of the productive resource base;
2) Strengthen women's participation in managing and controlling financial and productive resources; and
3) Increase democratic processes at the local level.

FPP coordinated the EFEA applied research component from 1998 until the end of EFEA in November 2002. A seven-member research committee[1] identified the research topics, selected research proposals on an annual basis, coordinated research field activities, reviewed draft reports and disseminated research findings.

During these four years, 28 researchers conducted research activities in 275 community, private and national forest areas. The majority of researchers were male BSc final year students at the Institute of Forestry. Others included PhD and Masters level students, both Nepali and international, and forestry professionals associated with the Nepal Foresters Association, the Ministry or independent consultants. The applied research component cost an equivalent of US $50,754 with each research activity ranging from $190 – $4000. Additionally, EFEA established 51 demonstration plots with 37 Community Forest User Groups (CFUG).

The synthesis is arranged in eight research categories. The research categories are grouped according to inter-related target groups, with the national level providing policies and guidelines to district level that provides support services to the CFUGs, which in turn engage in national level policy dialogue.

Summary of EFEA Research Activity Categories

TARGET GROUP	**RESEARCH CATEGORIES**
CFUG Level	1) Active forest management and basic forest products 2) Income Generating Activities, Non-Timber Forest Products and Biodiversity 3) CFUG Fund Management 4) Governance and Democratic Functioning 5) Impact on Livelihoods, Equity and Gender Issues
District Level	6) Support Services to CFUGs 7) Private Forestry and National Forest Management
National Level	8) Policy Issues

At the CFUG level, in 1995 there were 359 CFUGs formed in the eight districts; by 2002 there were 1,651 CFUGs formed and a clear trend of overall improvement in the **physical condition of the forest areas** handed over for community forests (CF). Vegetative cover has increased in sampled CFs with increased availability of forest products. More NTFP species are identified in Tarai forest areas compared to the hills. Researchers analyzed NTFP species being currently harvested and marketed, and promote NTFPs for income generation. Biodiversity levels are found lower under annual grasscutting and clearing management approaches that encourage timber growth. Active forest management technologies of lopping and litter removal are presented for Sal forest management.

[1] The research committee was comprised of: the EFEA Coordinator, EFEA Planning and Monitoring Officer, representatives from DFO and DSCO, team leaders from the Forest Enterprise component Ban Udyam – New ERA/Biodiversity Support Program and FPP-CARE, and the FPP Research, Monitoring and Documentation Officer.

Research findings show strong preference for multiple forest product management systems rather than for timber production. The researchers found generally that demand for forest products exceeds community forest supply, and that national forest areas are being encroached upon to help fulfill the deficit of forest products.

Researchers who looked at **social equity in CFUGs**, disaggregating socio-economic groups and analyzing cost / benefit flow, found the poor and marginalized CFUG members receiving disproportionately lower benefits from CFs. The poorer households are negatively impacted by the increased CFUG restrictions on harvesting forest products, requiring increased time for collection of CF forest products, receiving inequitable revenue distribution from timber sales, and inequitable benefits from the average 24% CFUG funds allocated to community development activities. The disparity and levels of conflict are greater in resource-rich CFUGs compared to subsistence-oriented resource-poor CFUGs. Researchers note that there were no programs specifically for poorer households in any sampled CFUGs.

Two research activities focused on Tarai and Inner Tarai **CFUG fund management** and found that the 22 sampled CFUGs are earning an average of 36% from forest products and expending an average of 24% on community development, 28% on forest production and development, and 40% on CFUG institutional development. The EFEA/FPP promotion of public auditing and training in record keeping skills have helped improve CFUG fund management and increase transparency. Researchers observed that neighboring CFUGs influence each other and highlighted the positive impact of CFUG networking at the Range Post level. Constraints in fund management are identified as: low functional literacy, numeracy and arithmetic skills; frequent turnover of trained Treasurers and Secretaries without handover orientation; and lack of guidelines for community development and poverty alleviation objectives. (Section 2.3.3)

An analysis of the CFUGs in terms of **governance and democratic functioning** shows a general trend of improvement. Women and disadvantaged people are increasingly participating and holding FUC positions, mechanisms for leadership changes are being established, the constitutions and Forest Operation Plans (FOP) are followed more and renewed FOPs reflect more of the needs of poor and marginalized households. Deeper analysis indicates that men from the elite and wealthy households continue to dominate the key FUC positions. Researchers elaborated that the poor and marginalized cannot afford the opportunity costs of participating in CFUG/FUC meetings and losing a day's wages.

Researchers highlighted the effectiveness of the FPP strategy to supplement DFO support services by identifying and training Local Resource Persons. The LRP provided orientation and training to ordinary CFUG members to be aware and understand their CFUG constitution and FOP.

The CFUG **decision-making and documentation** were found to have improved, but **dissemination of information** is still weak. The researcher pointed out a missed opportunity of more directly linking CFUGs with Non Formal Education (NFE) classes by directly sharing information from the CFUG with the NFE classes. This supports other researchers' findings that the NFE courses[2] have had a positive impact in directly reaching women, building their confidence to actively participate in CFUG FUCs and showing an increasing trend of all women FUCs.

At the District level, the research included studies on support services to CFUGs through the DFOs and the complementary **Non-Formal Education** (NFE) programming as discussed above. The NFE classes graduated over 20,000 women through 1,000 NFE classes at a cost of about US$ 6.50 (NRS 500) per graduating student. A CARE FPP report states that over 40% NFE graduates are Dalit; however, in the research activity, the researcher did not disaggregate NFE participants' by socio-economic status. Researchers strongly advise building on this tested and proven approach to reaching women, and recommend a continuation and strategic expansion of the NFE courses to reach

[2] The NFE course curriculum included adult literacy, numeracy, arithmetic, community forestry, and home improvements, such as pit latrines.

the poor and marginalized households. Areas observed for improvements include using more "learning by doing" teaching methods, revising curriculum to strengthen literacy, numeric and arithmetic skills and enriching curriculum with specific community forestry sessions to discuss current decisions and issues.

The **Post Formation Support** (PFS) is primarily provided by the DFOs, supplemented by WDOs, INGO (CARE – FPP), local NGOs and clubs. Researchers found that CFUGs in closer proximity to DFOs received a higher level of support than more distant CFUGs. Analysis showed that CFUGs with larger forest areas and larger, heterogeneous groups require more PFS than smaller, more homogeneous CFUGs with a higher percentage of women in the FUC. DFO staff are not able to provide adequate PSF support due to inadequate human resources and lack of bottom up training needs assessments.

Tarai forest user identification is complicated because the configuration of communities and forest users in the hills and Tarai are not similar. The direct transfer of CF user identification processes from the hills to the Tarai was not appropriate, and has resulted in exclusion of traditional / secondary and tertiary users who now live far from Tarai CF forest areas. A couple researchers highlight CFUGs providing secondary users access to CF resources on a fee payment basis. However, most of the applied research looked at equity issues within the CFUG membership, and only a couple researchers looked at the equity issues for people outside the CFUG membership. Conflicts arising from inadequate pre-formation support, including user identification, and confusion arising from lack of clear policy and guidelines for Tarai CF has resulted in increased demands for PFS.

The 2000 Amendment to the 1995 CF Directive requires a **Forest Inventory** for every new and renewed CFUG Forest Operation Plan (FOP). The Community and Private Forest Division issued the Forest Inventory guidelines. The researchers report that the CFUGs expressed appreciation for the concept of Forest Inventory to systematically assess forest resources for sustainable management, but cannot implement it independently. DFO staff found the Forest Inventory technically demanding, time consuming and increasing demands on DFO staff support services. The constraints of implementing the Forest Inventory have resulted in FOPs expiring. When the FOPs expire after their five year terms, the CFUGs legally lose their rights to utilize the community forest area and products. Within the next four years, approximately 50% existing CFUGs' FOPs will expire.

The 1993 Forest Act established the **Operational Forest Management Plan** (OFMP) as a forest sector approach for forest management activities and distribution of resources, focusing on the Tarai districts. Researchers found forest users perceptions that the OFMP is a barrier for handing over CF. In Banke, 3% of the forest area was designated as Potential Community Forest Areas, and already 96% of potential CF has been handed over, illustrating the high demand by communities for CF. Researchers found wide variation in the allocation of community forest areas ranging from 0.02 – 3.39 hectares per household, and no official guidelines. Although the Forest Inventory and OFMP have been developed to scientifically inventory the physical forest resources, neither the FOP nor the OFMP include a social inventory process to determine the level of demand for basic forest products. Without officially joining and recognizing the need for both the physical and social inventories of forest resources and demands, benefits from Nepal's forest resources will not be equitably distributed for basic forest products, community development or poverty alleviation.

Researchers found that people are encroaching on **national forests** to meet the forest product deficit because the CFs have excluded some forest users, are not able to provide members with all basic forest products, and have restricted access to grazing. The researchers conclude that CFs are being protected at the cost of national forests.

Researchers found that community forestry had a positive impact on **private forestry,** primarily on fodder production. The limitation in private forestry is land availability, which constrains landless and poorer households. Researchers concluded that as long as products from National Forest areas are available, then alternative energy approaches, including private forestry, would not expand

significantly. Alternative management approaches in developing National Forest areas need to be explored, including Leasehold and Collaborative Forest Management.

The **DFO role** has been evolving with the forestry sector policies: from forest protection with a role as forest guard and protector to community forest extension agents, and most recently to community development worker for poverty alleviation. Researchers highlight the changing role of DFO staff, the continuous need for DFO training to keep up with the changing requirements, the increasing demands on the same, or reduced, number of DFO staff, and constraints in DFO staff capacity to travel around the district to provide support services to CFUGs. Researchers conclude that the constraints on the DFO staff result in inadequate support services to CFUGs.

At the national level, the researchers found that recent legislation and directives have created confusion and distrust by contradicting the existing 1988 Master Plan for the Forestry Sector and the 1993 Forest Act. Specifically, the researcher highlights two clauses in the May 2000 New Forestry Concept for the Tarai, Inner Tarai and Chure: (1) the limitation of handing over barren and isolated patches of shrubland as CF, and (2) the requirement to pay 40% tax to the government on revenues from surplus timber sales. The researcher reports that forest users request handover of barren shrublands for community forestry. Furthermore, CFUGs already support community development activities, and are enthusiastic to continue and expand community development activities for poverty alleviation. However, the CFUGs and the apex organization FECOFUN have voiced concern that the government's lack of specific "program purposes" for the taxation and the arbitrary taxation policy will have a long-term negative impact on community development activities undertaken by CFUGs.

Summary of Recommendations from EFEA Applied Research Component

In this section a brief summary of the recommendations are presented; the Policy Level recommendations are presented first, followed by District Level and finally CFUG level. More detailed recommendations from each research activity are included in ANNEX E.

Policy Level Recommendations

1. Focus on social equity in an integrated forestry sector rather than only community forestry. In forestry sector development, the OFMP process needs to be reviewed and revised to include a social equity component with a consultative process that focuses on the poor and marginalized households in the district, particularly those who were excluded from CFUGs.

2. Provide clear guidelines for community development support from CFUGs. Conduct a cost - benefit analysis of community forestry, and facilitate dialogue to develop guidelines and indicators for equity in both benefits and contributions, especially labor from poor and marginalized households, to community forestry for community development. The HMG "program purpose" and legal framework for CFUG taxation should be defined, and transparent fund management systems established.

3. Establish a communication system between National Policy Level, District Levels, CFUG Levels, and between CFUGs to foster consultative policy development and strengthen conflict resolution and democratic functioning.

4. Within community forestry, Tarai CF guidelines need to be developed and contradictions and confusion in legislation resolved. This body of research looked at equity issues within the CFUG, but did not look at the issue of exclusion from CFUGs. Future research can further support social equity by researching Tarai forest user identification issues and community forest area size relationships to households' basic forest product needs.

5. Review DFO workloads, training needs and staffing levels relative to CFUG requirements for support services, especially for implementing Forest Inventories and guiding CFUG support for community development activities. Assess existing and potential Private Service

Providers (Local Resource Persons/Organizations, local NGOs, clubs, etc.) to supplement DFO staff. Promote Participatory Monitoring and Evaluation (PM&E) systems that help DFOs to classify CFUG support needs and to more effectively target support service efforts. Encourage richer CFUGs to pay for support services from Private Service Providers.

6. Extend FOP validity period so that existing CFUGs can continue to manage CFs and harvest basic forest products despite expirations due to inadequate support services to implement the Forest Inventories and renew FOPs.

District Level Recommendations

7. The DFOs need clear policy and guidelines from the center to make appropriate decisions about district forest resource management for private and national forests, including CFs. Guidance on community forest size per household should be based on equity for basic forest products. Guidance is required for equitable access for secondary and tertiary forest users. National forest management should include Collaborative Forest Management. Private forestry directly benefits wealthier households, and should be lower priority.

8. Increase awareness of community development and poverty alleviation objectives of community forestry. Support CFUGs to assess CF members' socio-economic status. Review and build on employment opportunities by training poor CFUG members in employable skills such as timber harvesting, NTFP processing and marketing, etc.

9. Assess district based organizations and persons that can supplement DFO support services to CFUGs, including NFE implementing organizations, local NGOs, clubs, Local Resource Persons, Private Service Providers, local political leaders, etc. Classify CFUGs by training needs and potential for independently paying for support services. Orient and train local service providers to CF and CFUG needs.

10. Build on the effective link between NFE and CFUGs: establish curriculum for orienting ordinary CFUG members in the constitution and FOP, and create a forum for NFE participants to discuss current CF issues and decisions. Expand NFE to include poor and marginalized community members. Refine teaching approach with more "learning by doing." Review writing/reading and arithmetic training techniques. Diversify Community Reading Center materials for neo-literate adult users. Future research topics should include the socio-economic monitoring of NFE participants, inventory and assessment of NFE implementing partners, potential coordination, and development of self-tutorial, distance learning materials.

11. Strengthen DFO capacity to support CFUGs technically, socially and managerially, specifically including Forest Inventory, multiple forest product management, CFUG fund management, identification of and orientation for auditors, equity and conflict resolution, and community development activities.

12. Strengthen DFO capacity to assess, select, orient, train and coordinate alternative service providers for CFUGs, including: NFE classes, registered auditors, Private Service Providers for FOP preparation, alternative energy sources such as biogas and Improved Cookstoves, traditional NTFP users, income generation activities, etc.

13. Monitor selection of training participants for equitable representation of women, poor and marginalized households.

14. Investigate potential NTFP market advantages of networking and coordination between CFUGs, and constraints for coordinated marketing.

CFUG Level Recommendations

15. Focus on equitable distribution from multiple product forest management with first priority on basic forest products and second priority for commercialization. Build on positive findings from grazing restrictions and active forest management. Build on examples of CFUGs providing access to traditional / secondary and tertiary users. Build on ethno-botanic knowledge of traditional forest users.

16. Raise awareness about community forestry directly supporting community development and poverty alleviation. Identify CFUG employment opportunities and community development activities to benefit the poor and marginalized households. Build on effective Range Post level training and networking between CFUGs to share ideas and skills in: community development, secondary/tertiary user access to CFs, forest management techniques, Forest User Committee governance and democratic functioning, PM&E, marketing, etc.

17. Strengthen mechanisms for dissemination of information within CFUGs, between CFUGs, between District and CFUGs, and between Central level and CFUGs. Build on the success of the NFE classes with increasing women's participation in CFUGs, and expand target to include poor and marginalized households. Build on the FPP model of developing Local Resource Persons to communicate CFUG constitutions and FOPs to ordinary CFUG members. Build on CFUG networking at Range Post level.

18. Strengthen CFUG fund management capacity with transparency and equity as indicators. Build on public auditing by promoting public auditing by CFUG General Assemblies. Optimize use of trained FUC Treasurers and Secretaries structuring on-the-job training and handover orientation by incumbents. Future research topic identified: analyze benefit flow from CFUG credit loan fund to different socio-economic strata in the CFUG. Facilitate participatory process to develop CFUG fund management guidelines.

FPP Research Synthesis Report

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INTRODUCTION

1.1 Background

The 20-year Master Plan for the Forest Sector in Nepal was approved in 1988. Community forestry was given first priority over other forest management plans with 47% of the total budget allocation. Specifically, the MPFS directed HMG *"to develop and manage forest resources through the active participation of individuals and communities to meet their basic needs*" through *"phased handing over of all accessible forests to the communities to the extent that they are able and willing to manage them."* The MPFS made provision for re-orientation and training for DFO staff to step into their new roles as extensionists and advisers from the old role of forest protection.

The Constitution of the Kingdom of Nepal 1990, Article 26 (3) envisages that decentralization will empower the nation's people and requires the state to mobilize the nation's natural resources and heritage in a useful and profitable manner for national welfare. Similarly, Article 26 (4) stipulates that the state will give priority to protecting the environment, taking special measures to prevent further damage due to physical development activities and arranging for the protection of rare wildlife, forest and vegetation.

Following the changes in the political system in 1990, the community forestry regulations were revised. (In the 1950's and 1960's, the major political changes were also followed by major revisions in the forestry laws.) The former Panchayat Forest (PF) and Panchayat Protected Forest (PPF) were replaced by "community forest". The provision was made to handover local forest management to actual user groups rather than local political bodies.

The Forest Act 1993 states that forest user groups shall be autonomous and corporate bodies having perpetual succession. The Forest Regulation 1995 stipulates that the forest user group shall be legally registered in the District Forest Office, and that the CFUGs have the right to sell forest products without taxation. The First Amendment to the Forest Act 1999 links community forestry directly with community development and poverty alleviation, guiding CFUGs to allocate unspecified percentage of CFUG funds for community development activities, and minimum 25% funds for forest management. Specific guidelines for CFUG fund mobilization for community development were not provided.

The Amendment to the Community Forestry Directive 2000 issued the "Guidelines for Inventory of Community Forestry" requiring a Forest Inventory for every CFUG, at the time of Forest Operation Plan renewal/development.

Following the MoFSC February 2000's circulars and directives, the New Forestry Concept for the Tarai, Inner Tarai and Chure Forest Management approach was presented. The concept includes: large blocks of Government Managed Forest (GMF) demarcated for scientific management; Collaborative Forest Management; ban on cutting green trees for five years; potential community forest areas in the Tarai, Inner Tarai and Chure restricted to barren and isolated shrublands; in the Chure, watershed management approach will be promoted; and a benefit sharing scheme whereby GMF shares 25% revenues with DDC for local development, and the CFUGs are mandated to pay 40% revenues from selling timber outside the UG, plus 10% VAT, to the DFO.

The Community Forestry Guidelines (2001) suggests hamlet (*tole*) level discussions in order to encompass the needs and interests of the poor, women and destitute sections of the community while preparing forest management plan or revising it.

Historically, forest management in Nepal has swung from one extreme of state sponsored exploitation to the other extreme of global recognition for an effective model of community forestry: handing over

forest management control and use to the local communities (Singh 2002a; Gentle 2000; Annex A). The challenge now is for the government of Nepal to steer its way towards equitable access to and distribution of the nation's valuable forest resources to help address the abject rural poverty in Nepal.

1.2 Overview of Environment Forest Economic Activity (EFEA) and the Forestry Partnership Project (FPP)

USAID initiated the EFEA with the overall project goal *"to increase rural household incomes through sustainable private sector agriculture and forestry enterprises."* The project purpose is "to facilitate local control and management of natural resources in the Mid-Western Development Region, to improve forest productivity and sustain the environment. EFEA had four implementing partners: CARE Nepal implementing the Forestry Partnership Project (FPP), New ERA/Biodiversity Support Program implementing the forest enterprise component (Ban Udyam), WWF Nepal implementing the Northern Mountains Conservation Project in the Dolpa district, and GreenCOM implementing the bottom up communications component. The specific objectives under EFEA were to:

4) Increase the sustainable management of the productive resource base;
5) Strengthen women's participation in managing and controlling financial and productive resources;
6) Increase democratic processes at the local level;
7) Develop natural resource based micro-enterprises (principally in conjunction with the Biodiversity Support Program); and
8) Strengthen bottom-up planning and policy reform (in conjunction with Green COM).

CARE Nepal implemented the FPP in the eight EFEA districts of the Mid- and Far- Western Development Regions of Nepal. These included the Tarai districts: Banke, Bardia and Kailali, and five hill districts: Dang, Salyan, Pyuthan, Rolpa and Rukum. FPP focused on the first three objectives, providing technical assistance to the District Forest Offices (DFO), District Soil Conservation Offices (DSCO), and Women Development Offices (WDO) to strengthen the capability of their staff to organize and support community forest users' groups.

The FPP was operational from November 1996 to November 2002. The main interventions in the project were: strengthening operating efficiency of DFOs and DSCOs; users' group formation support and forest handover; support to forest management technology; facilitating applied research; increasing women's involvement in community forestry through non-formal education with WDO, NGOs and others; and developing and strengthening CFUG planning, implementation and financial management capacity. Additionally, the FPP organized trainings and workshops to increase the representation of the poor, Dalit and women in CFUGs.

In brief summary, FPP supported the DFOs and users to form 949 CFUGs and handover 102,500 hectares of community forest in the eight EFEA districts (Tables 4 and 5). In general, CFUG members feel that the project has contributed to improving their community forest conditions, and increasing availability of forest products. A slow shift is taking place from protection oriented forest management to more sustainable production management approaches. However, some poorer household members and secondary users feel that the CFUG rules and regulations have restricted access to forest products from community forests. Overall, the issue of equity is obstructed by the lack of identification and analysis of costs and benefits associated with CF. In terms of governance and participation, the overall research findings are positive: the project has contributed to increasing women's awareness, participation and benefits from community forestry. Despite the advances however, there is still inequitable distribution of benefits from community forests because the wealthier, more influential households continue to dominate the CFUG decision-making processes.

1.3 EFEA Applied Research Component

Under the specific objective of "increasing sustainable management of the productive resource base", EFEA included an applied research component in the FPP to test innovations in forestry management. The component included two approaches:
a) applied research activities, and b) forest management demonstration plots.

In the EFEA logframe, the Means of Verification for the applied research component are:

i. the number of innovations tested and adopted by CFUGs;
ii. the number of innovations tested and adopted by DFOs.

This report synthesizes the 28 applied research papers in the EFEA Applied Research Component, and is arranged as follows. The main section, Applied Research Activities, presents: the management and methods used in the research activities; the research activities are organized into categories; the major findings and a summary of conclusions and recommendations. The next section presents the Demonstration Plot activities. The final section briefly discusses the Research Component Evaluation.

APPLIED RESEARCH ACTIVITIES

2.1 Management and Methodologies

2.1.1 Research Component Management

A research committee was formed in 1998 with the EFEA Director as Chairperson. The seven member committee also included the EFEA Planning and Monitoring Officer, representatives from the DFO and DSCO, team leaders from Ban Udyam/New ERA and FPP/CARE Nepal, and the FPP Research, Monitoring and Documentation Officer. FPP-CARE Nepal managed the EFEA applied research component.

The research committee was mandated to facilitate and administer the research and study program, specifically: identify appropriate research topics; select researchers; administer and coordinate research field work; monitor and supervise research activities; and disseminate research findings and recommendations.

The research committee consulted with stakeholders and appropriate research institutions to identify research topics, and then shared the list of research topics through EFEA partners with potential research institutions, including the Institute of Forestry (IOF) and the Nepal Foresters' Association (NFA). The research committee requested proposals and selections were made on a consensus basis, generally arranged once a year.

Table 1. Number of Research Activities by Year

YEAR	1999	2000	2001	2002	TOTAL
# Research Activities	6	7	4	11	28

The researchers represent a range of experience and institutions. The majority (60%) were BSc final year students from the Tribhuvan University – primarily from the Institute of Forestry, but also one from Xavier Academy. Four researchers (14%) were Nepali professionals under the auspices of the Nepal Foresters Association, the Ministry or the University. Three researchers came from foreign universities in New Zealand and the USA at PhD and MSc levels, and one from India. The final two researchers were independent consultants from Canada and Japan. Of the 28 primary researchers, only three were women (two research assistants were also women).

In hindsight, the Applied Research Component has addressed the following three objectives:

i. Generating and disseminating knowledge and innovations for forest management, especially for community forest management through participatory action research.
ii. Developing research skills and capacity of the individual researchers through the research activity experience.
iii. Strengthening institutional networking between the researchers' institutions and the project implementation team, as well as other EFEA stakeholders and related institutions.

The first two objectives were expected, and achieved. The third objective of strengthening network linkages between institutions has helped to link researchers and research institutions more closely with communities and CFUGs. This applied research component has contributed to shifting the focus of forest management research and the research approaches from a more academic orientation towards "bottom up planning" with priority issues identified by the communities, and especially by the more marginalized sections of the communities.

The applied research component cost the EFEA program an equivalent of $50,754 over the project period to support partial research grants, logistics, equipment and field supervision. The cost of each research activity varied according to the situation, and ranged from $190 - $4,000. The Demonstration Plot activities were established by CFUGs with minimal financial support from EFEA.

2.1.2 Applied Research Methods

The research methods followed forestry and social research methodology norms for explorative and quantitative research. Many of the researchers had advisory support from their institution for both research content and methods. With the range of researchers including PhD, MSc and BSc students, professional foresters and independent consultants, the level of detail and depth of research methods applied varied. The various methods applied by the researchers are described below.

Networking: The researchers all worked with the EFEA staff and DFO and DSCO counterparts at field level to central Kathmandu level providing a forum for informal, objective analysis of project activities. The applied research component promoted direct linkage between beneficiaries and researchers, contributing to a shift from more academic to more applied research. Researchers networked with EFEA staff, colleagues and beneficiaries to finalize their research focus, select districts and forest areas, develop questionnaires and checklists, implement the research, analyse the results and share them with stakeholders.

District and forest selection: The researchers selected districts and forest areas based on research criteria and discussions with EFEA staff, district line agency staff, CFUGs and others. The number of forest areas surveyed in the course of any one research activity varied according to the scope of the research activity. Most researchers surveyed 2-4 forests, though it ranged from 1 – 76, with a total of 275 forests (primarily CFUGs, with less than 20 private forest and national forest areas) surveyed in the course of implementing the EFEA Applied Research Component.

Table 2. District Distribution of Research Activities

District	**Dang**	**Banke**	**Bardia**	**Pyuthan**	**Salyan**	**Kailali**
# Research Activities	13	10	9	6	2	5

NB. Many research activities were conducted in more than one district.

Secondary data collection: All researchers collected secondary data from EFEA, DFO, CFUGs, DDC/VDC and other relevant sources. The research papers include literature reviews.

Forest Surveys: Physical condition of the forests was determined through a combination of methods: field visits and visual observation; forest type categorization; forest inventory surveys for trees and NTFPs were conducted measuring DBH, basal area, density, crown cover, ground cover, species richness, abundance and regeneration; sample plots; vegetation transects; species surveys; specimen collection; ranking of preferred species; livestock population and grazing practices; incidences of

grazing and fires; fuelwood consumption patterns; forest product demand estimates, timber and NTFP harvesting; etc.

Social Surveys: General socio-economic information collected from household surveys and interviews with community and CFUG members (committee and ordinary) includes: population, family size, age distribution, gender and caste/ethnic group distribution, landholdings, education and literacy levels, livelihood strategies/occupations, livestock holdings, etc.

CFUG surveys included individual interviews and focus group discussions with separate interest groups (i.e., all women, all disadvantaged households) to collect information on: representation on CFUG Executive Committees, levels of participation in decision-making; CFUG institutional strength; ordinary members' knowledge of the constitution and FOP; communication and dissemination of information within the CFUG, between FUC and members; basic forest product demand and supply; cost – benefit ratio; etc.

Interview sampling frame: Mixtures of purposive and random sampling approaches were applied. Purposive sampling was applied when the researchers wanted to stratify and compare socio-economic categories. Key informants were also identified for interviews by virtue of their forest knowledge or occupations (i.e., market middlemen, *baidyas* - Nepali doctors who use medicinal plants).

Tools: Various Participatory Rural Assessment (PRA) and Rapid Rural Assessment (RRA) tools were used by researchers, including: social/resource mapping; trend lines; wealth ranking; household surveys/interviews; focus group discussions with women and DAGS or other special groups; semi-structured interviews; informal discussions; checklists; questionnaires; preference rankings; triangulation; and interactive workshop with stakeholders. One researcher used the "homestay" as a tool to observe and live closely with informants by staying in village homes for several days.

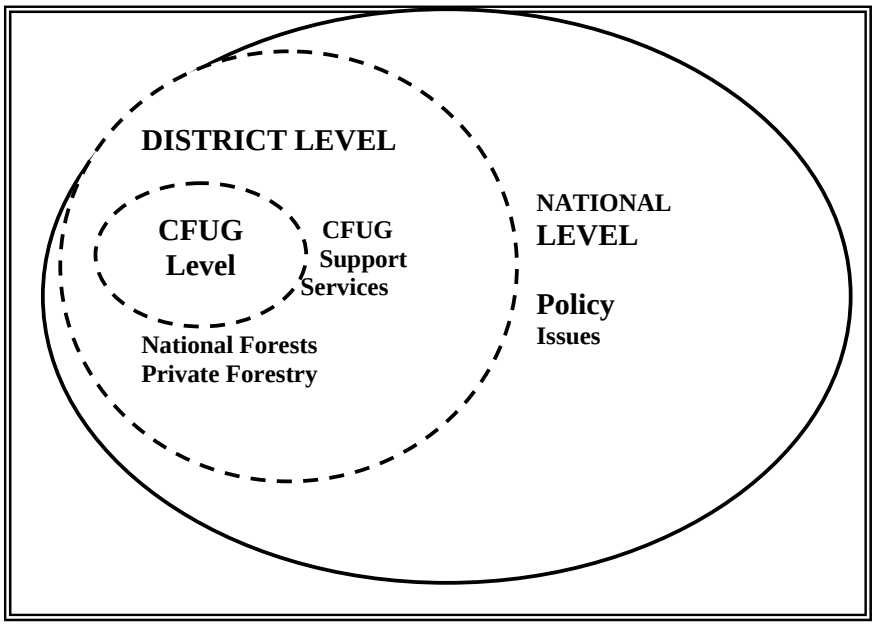
Data Analysis: Data were generally classified and analyzed with simple statistical applications including percentages, mean, standard deviations, averages, various confidence intervals, and cost-benefit ratios, with presentation through tables, bar charts, pie charts and trend lines. Biodiversity data was analyzed for density, relative density, frequency, relative frequency and relative importance. The Species Area Curve, Simpson's Diversity Index, Sfrenson's coefficient of similarity and the "t-test" were also applied to determine the minimum number of quadrants required for sampling, discern the total number of species and the species common to different sites. Arithmetic projections for potential income were calculated.

Report Preparation: Draft reports were shared with the Research Committee for comments prior to submission of the final reports. The reports included sections on: problem statement and background, limitations, description of study area, maps, research methods, research activity flowchart, data collection and analysis, results and discussion, findings/ conclusions and recommendations, with annexes including references/bibliography and questionnaires. A few of the researchers also explicitly stated hypotheses for their research activity. The latter research reports organized the recommendations for CFUG, DFO/project, and policy levels.

2.2 Research Objectives - Categorization

The body of research conducted under the EFEA Applied Research Component addressed issues within the CFUGs, and contextual issues beyond CFUGs.

Box 1: Diagram of Research Target Groups



The research activities have been categorized below. The first five categories focus on the CFUGs' capacities and skills. The next two categories look beyond the

Table 3: Summary Table of FPP Research Target Groups, Categories & Activities

SN	Target Group	Research Category	# Research Activities	In the Years '99	'00	'01	'02
1	CFUG Level	Active Forest Management and Basic Forest Products	4	X		X	X
2		IGAs, NTFPs and Biodiversity	5	X	X	X	X
3		CFUG Fund Management	2	X	X		
4		Governance and Democratic Functioning	2				X
5		Impact on Livelihoods, Equity and Gender Issues	7		X	X	X
6	District Level	Support Services to CFUGs	3	X			X
7		Private Forestry and National Forestry Management	4	X	X		X
8	National level	Policy Issues	1				X
		TOTAL:	**28**				

NB: The applied research component started in 1998; no studies were conducted in 1997 and 1998.

CFUGs at the District level interaction between community, national and private forests, and the support services provided to CFUGs. The final category addresses national level policy issues and the legal framework for forestry development in Nepal. The number of research activities completed in each category is noted on the table, along with the years the research activities were conducted. A chronological listing of the research papers is presented in ANNEX B.

There are crosscutting issues that several papers address including: Tarai Community Forestry policy, user identification, secondary users, etc. The findings and recommendations on the crosscutting issues are highlighted in section 2.3.5 below.

2.3 Summary of Research Findings by Categories

The findings are presented by research categories. The table in the beginning of each section provides the list of research activities and papers reviewed, presenting the author's name, date the paper, and title of the research activity. A chronological listing of the research activities is in ANNEX B. Abstracts for each research paper are included in ANNEX C, also arranged according to topic categories.

2.3.1 Active Forest Management and Basic Forest Products

Table 4. List of Research Activities: Active Forest Management and Basic Forest Products

Author	date	Research Activity Title
Dinesh, Yadav	2002	Assessment of Fuelwood Supply and Management Status in FUG (A Case Study of Pragatishil Women CFUG in Chailahi VDC Dang District)
Gautam, Krishna Hari	2001	Indigenous Knowledge of Multiple Product Forest Management and Contribution to Silviculture for Community Forestry
Upadhyay, Suraj	Feb-01	A Comparative Study of Grazing Effects on Community Forestry (A Case Study from Ghantadev CFUG in Dang)
BK, Nirmal Kumar	1999	Harvesting and Utilization of Timber Products in Community Forests (A Case Study from Dang District)

This set of research papers investigates the availability of basic forest resources: fuelwood, fodder/grazing, and timber, and potential for active forest management. All four research activities were conducted in Dang district.

Dinesh (2002) found that the demand for **fuelwood** exceeds the supply by ten times in the sample CFUG with 101 hectares of forest and 65 households. Since there are no guidelines for minimum per capita forest area based on forest productivity, it ranges from 0.02 – 3.39 ha. forest per household (Ghimire, K. 2000). In Dinesh's case study, the CFUG has 1.55 ha/household, representing the middle range, and showing a significant deficit of fuelwood available to CFUG members.

Upadhyay (2001) found very distinctive differences between freely grazed areas and areas restricted from **grazing**. In the free grazing areas, natural regeneration of trees was completely absent, biodiversity, especially of palatable species, was significantly lower, and the soil condition and humus levels were poorer than in the controlled grazing areas. Upadhyay's discussions with CFUG members indicated that although they recognize the merits and demerits of both systems and the negative impacts of free grazing, the lack of alternatives compels them to continue free grazing practices in designated forest blocks. Upadhyay observed that 50% of the herdsmen were young children who were not aware of the potential damage from uncontrolled grazing, and identified them as targets for awareness raising and training.

BK (1999) focused his research on understanding the **timber** harvesting and utilization processes and practices followed by CFUGs. Three of the four CFs in Dang included in his research are mature Sal forests with sufficient supply of timber from standing and fallen stocks. BK noted that villagers prefer multiple purpose tree species, such as Sal which can be used for timber, fodder and fuelwood. BK found that the actual harvesting is contracted to outside labor, rather than CFUG members due to CFUG members lack of harvesting skills and equipment. This was highlighted as an opportunity for training poorer CFUG members and providing employment.

Gautam (2001)'s PhD research objective was to develop appropriate **silviculture techniques for multiple product management** of community forests, focusing on timber and NTFP production. His forest management experimental design for two CFUGs included four treatments of lopping trees and two levels of removing leaf litter with eight replications, and measurements of regeneration and tree growth over a one year period. Complementing the forest management experimentation, Gautam explored the ethnosilviculture knowledge of CFUG members.

The forest management research demonstrates the possibility for active forest management to increase regeneration through lopping and litter removal for tree and non-tree species in general. Results indicate that: *"Lopping in older forests and litter removal in younger forests might be appropriate tools for immediately enhancing regeneration."*

2.3.2 GAs, NTFPs and Biodiversity

This category of research activities addresses development of Income Generating Activities (IGA), specifically, non-timber forest product (NTFP) based IGAs. The studies were conducted in a variety of districts representing hills, Tarai and Inner Tarai areas.

Table 5. List of Research Activities: IGAs, NTFPs and Biodiversity

Author	date	Research Activity Title
Deo, Ram Kumar	Feb-02	Diversity, Use, Indigenous Knowledge and Management of Floral Species in Community Forests (A Case Study from two CFs of Dang District)
Chaudary, Pramod Kumar	Feb-01	Women's Role in Extraction and Utilization of Non- Timber Forest Products in Community Forests towards Resource Sustainability (A Case Study from Salyan)
Devkota, Rosan	Dec-00	Income Generating Activities through Non-Timber Forest Products (A Case Study in Kailali District of Nepal)
Regmi, Binod	Nov-00	Autumn Floristic Composition and Conservation Strategy for Non-Timber Forest Products in Bardia District
Paudel, Dev Raj	Jul-99	Tendu Leaves as Source of Income for Community Forest Users (Case Study of 3 CFs in Banke District)

NTFP Based Enterprises

In general, the researchers found that NTFPs are contributing to income earning potential of community forests (Devkota 2000, Paudel 1999) and are positive factors in biodiversity conservation (Deo 2002).

Representing the hill forests, in Salyan district, Timur and Chuiri are the main NTFPs harvested. Two harvesting systems are used: for Chuiri, individuals harvest from the CFUG and market individually; for Timur, the CFUG hires a contractor who organizes wage laborers to harvest the crop (Chaudary 2001). In Pyuthan, women were found to be significantly involved with NTFP activities in the CFUGs, in descending order of magnitude, in NTFP marketing, extraction, nursery operation, and plantations (Chaudary 2001).

In the Inner Tarai/Tarai CFUGs sampled in Dang district, 130 NTFPs were inventoried. The following four were growing vigorously and were identified to be suitable for cultivation: Kurilo (*Asparagus racemosus*) used as a vegetable and marketable, Gurjo, Bojho and Pipla[3] (Deo 2002).

Three research activities were conducted in the Tarai forests. In the CFUG sampled in Bardia, Bet (rattan), Kurilo (*Asparagus officinalis)*, and Pipla (*Piper longan*) are identified with high potential for production. Pipla was found in association with *Zizyphus jujuba* regenerating in areas of maximum grazing pressure (Regmi 2000). In Kailali district, three CFUGs were sampled (Devkota 2000). The Tharu CFUGs members with degraded and barren community forest areas found vegetable and banana production more profitable than NTFPs. In another CFUG, the members received training in Citronella cultivation, and they adopted the technology by planting Citronella in their CF. CFUGs with better forest condition ranked rattan as the most important NTFP.

In Banke district, CFUGs harvest Tendu tree leaves *(Diospyros spp.)* for making bidis (Paudel 1999), earning households NRS 2,700 (US$ 35) annually, which is almost 20% of the average annual income of Nepalis (US$ 200). The Tendu leaf harvest period is short – one month just prior to the onset of

[3] Although Deo has inventoried the 130 species found in the two CFUGs, listing Nepali names, botanical names, plant form and ethnobotanic information, these three highlighted species are not listed.

monsoon. Leaves are harvested from all age trees – currently, 75% leaves are harvested from younger trees while mature trees have only 25% marketable leaves. Natural regeneration is vigorous, and the CFUGs have only protected existing plants. Some CFUGs have included Tendu management in their FOPs, allowing everyone to harvest during harvest season, but regulating damage to trees.

The marketing of Tendu leaves is dependent on individual middlemen coming to the village to purchase jute bags of bundles of 'cured' Tendu leaves directly from collectors. There is a perennial shortage of Tendu leaves, resulting in some bidi factories closing. So there is a good market for expanding Tendu leaf production for CFUGs (Paudel 1999).

In Banke, CFUGs identified a marketing problem (Ghimire, K. 2000). The individual CFUGs are producing 2-3 quintals of Pipla , whereby traders are working in quantities of hundreds of quintals. The research observed that there is no mechanism for accumulating produce from several CFUGs to jointly market a larger quantity.

In general, the Tarai CFUGs with richer forest resources have higher levels of conflicts (Devkota 2000).

Biodiversity

In the sampled hill CFUGs, although about 35 species NTFPs were found, only limited species with market value and potential for extraction were being marketed: Timur, Chuiri, Bet, Pipla and Kurilo (Chaudary 2001).

The Tarai/Inner Tarai sample CFUGs surveyed in Dang district (Deo 2002) indicate that the forest conditions are improving in terms of species diversification and growth of individual species. Deo (2002) inventoried 130 different plant species with their Nepali and botanical names, plant form, and ethnobotanical information on uses. The two sampled CFs differ significantly in terms of species composition.

In the Tarai, Bardia district, biodiversity was compared in community forests (CF) and government managed forests (GMF) (Regmi 2000). NTFP diversity was found to be less in sampled CF than in the sampled GMF. The researcher concluded that the CF management practices of annual grass cutting and cleaning operations obliterate the "disturbance gradient" found in GMF where species diversity is increased by variation in disturbance levels: habitat transition from the forest edges with more grazing pressure and sunlight towards the forest center with less grazing pressure and less sunlight. The CFUG FOPs that include CF management regime of annual grasscutting and removal of herbaceous plants are promoting tree growth for timber production and reducing biodiversity.

Ethno-botanical Knowledge

The researchers in the Tarai and Inner Tarai who disaggregated and correlated ethnicity with silviculture and ethnobotanical knowledge of forest products found the indigenous Tharu people significantly more knowledgeable about NTFPs than migrants from the hills (Deo 2002, Regmi 2000). The researcher who included a homestay in Tharu villages gained a respect and recognition of the valuable ethnobotanical knowledge, especially of the older generation (Deo 2002). In the CFUGs where migrants are the majority, forest based enterprise development is handicapped by the CFUG members' lack of awareness of NTFP potential.

2.3.3 CFUG Fund Management

CFUG fund management is a critical aspect of increasing equitable distribution of benefits to CFUG members and increasing transparency.

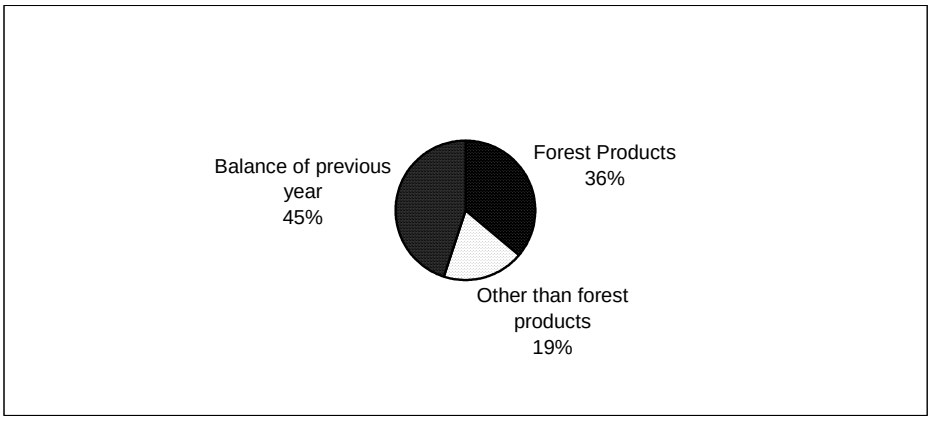
Table 6. List of Research Activities: CFUG Fund Management

Author	date	Research Activity Title
Ghimire, Kabita	Dec-00	Financial Management System of Community Forest Users Group: A Case Study from Banke, Bardia, and Dang Districts: Nepal
Bastakoti, Rishi Ram	1999	Fund Mobilization and Financial Management in FUGs

Fund Mobilization

These two research activities document that the CFUGs are implementing the First Amendment to the 1993 Forest Act (1999) whereby CFUGs are guided to allocate CFUG funds for community development activities. Ghimire (2000) found "*fund mobilization in community forestry means community mobilization.*"

Box 2: CFUG Sources of Income



Source: Ghimire,K. 2000

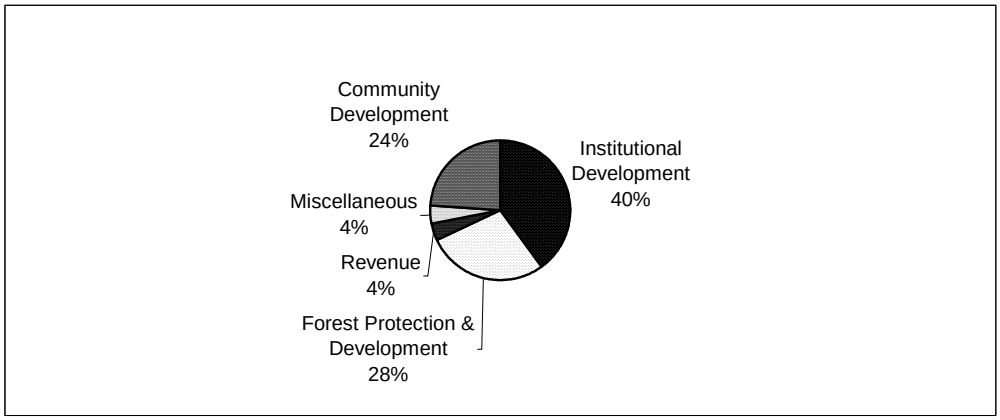
CFUG derived 36% income from forest products with almost 70% from timber in these predominantly Tarai CFs (Ghimire,K. 2000). In the Tarai CFUGs with mature Sal forests, the temptation to harvest and market the timber has been backed indirectly by DFOs and contractors by taking key CFUG personnel into confidence (Ghimire, K. 2000). This concurs with Devkota's findings that the CFUGs with rich forest resources also have higher levels of conflict.

Fuelwood earns 20% income, while grasses, nursery, NTFPs also contribute. Bastakoti lists income sources from forest products as saw logs, poles, Khair wood, fuelwood, thatch grasses. Additionally, he gives examples of revenues generated from nursery seedling production, molasses grass seed and grant support for demonstration plots.

Income from other than forest products constitutes about 20% annual CFUG income, consisting of grants, loan repayment, interest payments, membership fees, member entry fees, and fines/penalties.

CFUG Expenditures

Box 3: Break down of 22 Sampled CFUG Expenditures



Source: Ghimire,K. 2000

The 22 sampled CFUG expenditures averaged 40% for CFUG institutional development and administration, 28% forest protection and development, and 24% for community development (Ghimire,K. 2000). The First Amendment to the 1993 Forest Act provides guidelines that 25% of the CFUG funds should be allocated for forest protection and management, but does not provide further guidance for the community development allocation process.

The primary community development activities include 52% for credit and loans, 28% for schools 10% for roads, and grants and drinking water. The DFO Banke has issued a directive to stop loan activity, based on the finding that it does not help the group increase its fund. A future research activity could explore the credit loan programs, identify which socio-economic or ethnic / caste groups are benefiting from the loan programs, and recommend how to target benefits for poorer households.

Both researchers found that influential and influential people still dominate decision-making in the CFUGs. Although the General Assemblies (GA) provide a forum for discussing community development activities, the actual allocation amounts are not discussed in the GA (Ghimire,K. 2000).

From the CFUGs in Dang, Bastakoti found irrigation included as a CFUG community development activities. Irrigation will benefit farmers with irrigated land, which will tend to be the wealthier community members. Singh (2002a) also highlights the inequity of allocating CFUG funds for irrigation activities that only benefit wealthier households.

Ghimire (2000) observed that in terms of CFUG expenditures, the neighboring CFUGs are very influential and overall, the activities supported by CFUG funds are similar. Therefore, networking between CFUGs is a powerful tool for sharing ideas and skills, and for increasing bargaining power.

Box 4: CFUG Fund Management

> *"the main dissatisfaction of users with the fund collection system was the high price of timber and high fine rates (Tikuri CFUG, Pyuthan). In the case of expenditure items, the majority of the users criticized the greater expenditure in remuneration and administrative items than forest development activities."*

Source: Gentle 2000; Ghimire,K, 2000

CFUG Record keeping

In general, both researchers found that the project has had a positive impact in terms of improving record keeping skills of the CFUG committee. *"The project has achieved its objective in terms of establishing record keeping system and getting the records audited. The impact of record keeping training is positive. The groups have understood the importance of record keeping and the transparency"* (Ghimire, K. 2000). Despite the progress, Ghimire notes that there is plenty of room for improvement.

Bastakoti (1999)'s earlier research found that in some CFUGs record keeping skills were negligible and that generally within the CFUG and between the CFUGs and DFOs the financial reporting is inadequate. He identifies low levels of functional literacy and numeracy as a major constraint.

Ghimire (2000) observed that the investment in training CFUG Treasurers and Secretaries in recordkeeping only has an impact on the CFUG during their 1-2 year tenure. There is no system for incumbents to train incoming FUC officers.

CFUG Auditing

Overall impact of the project in promoting public auditing was positive. The auditing practices of the Dang CFUGs starts with Interim Audit by the CFUG, then the General Assembly comments and approves the audit report, which is then presented to a registered auditor for Final Auditing (Bastakoti 1999). The researcher found that CFUGs only pass the audited report to DFOs when demanded/requested.

Ghimire (2000) recommends that the auditing procedure should be revised to include an internal audit, or public auditing, by the General Assembly. She also found that there is no mechanism of the DFOs cross-checking audit reports.

Three different strategies are described for identification of registered auditors (Ghimire,K. 2000). In Dang, the Range Post level Networking Committees supported CFUG auditing. In Banke, the DFO helped identify auditors. In Bardia, the FUC identified the auditors themselves. Ghimire endorses the Dang and Banke approaches where the DFO assists in identifying auditors; she takes it one step further and recommends the DFO provide orientation to the identified auditors in CFUG audit requirements.

2.3.4 Governance and Democratic Functioning

Table 7. List of Research Activities: Governance and Democratic Functioning

Author	date	Research Activity Title
Singh, Bijay Kumar and Santosh Mani Nepal, (Nepal Foresters' Association)	Sep-02	Study on Democratic Functioning of CFUGs in Forestry Partnership Project Area
Acharya, Bishnu P	Feb-02	The Role of Local Political Leaders in Community Forestry Management

The EFEA Description (1996) states:

> *"User group management of natural resources is not only an important mechanism through which to manage the productive resource base to increase rural household incomes, it is an important vehicle for developing social equity and building democratic processes. There is opportunity, through the formation of CFUGs, for rural citizens to participate in democratic decision-making for the first time."*

The FPP proposal for EFEA included 12 indicators to assess democratic functioning, and two additional indicators were added later: CFUG communication systems and social equity. Singh and Nepal's research was conducted in August – September 2002, near the end of the EFEA project period. Therefore, the findings reflect the progress of the past six years of implementation. In general, performance was considered satisfactory, with good governance and democratic practices increasing in CFUGs.

Table 8. Indicators for CFUG Constitutions & FOPs Supporting Social Equity

SN	INDICATOR	1995[4] %	2000 %target	2002 findings
1	Active participation of women and DAG	25	50	64%
2	Committees include representation of all major interest groups (women, DAG and the poor)	---	60	66%
3	Ordinary members aware of rules, regulations and rights	---	50	43%
4	Mechanisms for leadership review/change and where leadership is actively affirmed or changed within 3 years of handover	---	15	65%
5	Following FOP and constitution	25	50	67%
6	New/renewed FOPs reflect needs distinct groups (women, DAG and the poor)	---	50	50%
7	Social equity	---	---	39%

Source: Singh and Nepal 2002a

The 13 indicators used by Singh and Nepal are rearranged and presented here in two groups: one focusing on CFUG constitutions and FOPs supporting social equity, and the second group focusing on CFUG decision-making, documentation and dissemination of information. The summary data on baseline status at the beginning of EFEA, the 2000 targets and the actual 2002 findings are presented for both groups of indicators.

CFUG Registration and Women's Participation

CFUG registration during the project period increased the number of registered CFUGs in the project area from 359 in 1995 to 1651 CFUGs in 2002, in the eight districts (Table 4). Within the registered CFUGs, Singh and Nepal found that women's participation on the Executive Committees (FUC) has increased, and he links the increase directly with the literacy program. He found an increasing trend of all-women FUCs with 180 all-women FUCs out of 1510 CFUGs (almost 12%), which is three times higher than the national average of 4%. The average female representation on mixed FUCs is about 30% in the EFEA area, compared to the national average of 21%. A further positive development is that women are now more confident to approach government agencies and other service providers to request support (Singh and Nepal 2002a).

Box 5: CFUG Registration of Male Householders Limits Women's Participation in FUC Elections

[4] Baseline information only included the five Rapti Zone districts, where a USAID funded integrated rural development project was operational prior to EFEA.

Restricted Rights of Women for Voting in User Group Election

In Gairakhali CFUG, Dang, and Satti Karnali CFUGs, Kailali, the name of the male household heads have been mainly listed in the register of forest user groups. These CFUGs have provisions that only registered persons can vote in the election of the executive committee, the Forest User Committee (FUC). In Gairakhali, for example, out of the total 481 household members, only 26 females have their names on the user group register, thus only 26 females are qualified for voting. Similarly, in Satti Karnali, most of the male members have name in the user group register. But when they go to India for work, women are not allowed to vote for election of FUC. These are some extreme cases which restricts participation as well as the rights of women in CF activities.

Source: Singh and Nepal 2002 a

Disadvantaged Groups' Representation and Participation

There is a growing understanding among users that representation in the FUC should come from each village or hamlet, representing each major interest group. The sampled CFUGs show that over 70% of groups (except in Bardia district) have representation of all major interest groups. This is a significant increase from the 37% in the Tarai CFUGs and 46% in Hill CFUGs determined in 1999 (Chhetri and Sigdel 1999). DAG participation is increasing, but they are constrained by the high opportunity cost of either attending FUC meetings or earning their daily wage. Although the quantitative assessment indicates increasing representation of the poor and marginal, interviews with Dalits and poor revealed that they are *"mostly silent during assembly,"* and *"many ordinary members replied that many people left the assembly soon after registering their attendance because their voices are not heard by influential people anyway." "Influential people still dominate in decision-making"* (Singh and Nepal 2002a).

Ordinary Members' Awareness of Rules, Regulations and Rights

In the sampled CFUGs, the more influential and educated members were aware of the overall community forestry rules, regulations and rights, while the ordinary members are aware of the more functional rules and regulations regarding fines, penalty, protection measures and forest products distribution. The researcher found an increase in ordinary members' awareness of the rules, regulations and rights, which was attributed to FPP's initiative to train local resource persons (LRP) to provide orientation on the constitutions and FOPs to ordinary CFUG members. However, the poor and Dalit are not equally informed. This indicator is highlighted as a weak area that requires further support.

Mechanisms for Leadership Review/Change

The research shows tenure for leadership positions ranges from 1-5 years and 70% of all districts sampled, except Bardia, have reviewed and changed leaders as per schedule (Table 4; Singh and Nepal 2002a). Systems for changing leadership ranged from consensus decision to elections, and changing varying numbers of the old committee. All CFUGs have established rules to automatically dismiss office bearers for repeated, unannounced absences. This provision is enforced in many of the CFUGs.

Researchers found that local leaders participate in CF because the FUC provides a platform for exposure for local government positions and the CF has significant local resources that the CFUGs and FUCs have control over (Acharya 2002). Direct involvement of political leaders in community forestry was seen at the ward and VDC levels, not at the district level. Acharya (2002) suggests *"political leaders can help to reduce conflicts within CFUGs"*, and recommends orientation and awareness training

CFUGs Following their Constitutions and FOP

The research found a significant increase from 25% to 67% in the number of CFUGs following their constitutions and implementing their FOPs (Table 4).

The research found that the constitutions and FOPs vary tremendously from very simple FOPs (particularly for earlier and smaller CFUGs) to well-documented and detailed FOPs (usually for more recent and larger CFs). The smaller, homogeneous CFUGs can more easily assemble for discussions and have more transparent decision-making. In the larger CFUGs that are formed of several separate villages, with a heterogeneous mixture of ethnic groups and castes, it is more difficult to assemble a quorum of 51%, and have open discussions for decision-making.

The CFUGs vary in their technical and management capacities, and many are still completely dependent on DFO Rangers because they lack skills and knowledge for silviculture management and for CFUG management. The recent requirement for Forest Inventories for FOPs is quite technical, and increases CFUG dependence on DFO Rangers for support to prepare or renew FOPs. The delays in the FOPs are obstructing community forest management, fulfilling people's basic forest product needs, and the effort to use community forestry momentum to support equitable community development.

New/Renewed FOPs Reflect the Needs of Distinct Groups (Women and Poor)

The recently prepared FOPs generally include Forest Inventory, NTFPs, income generation activities and community development activities. Some include specific provisions for disadvantaged groups, such as charcoal production for Kamis, and rattan collection for women and poor (Singh and Nepal 2002a).

However, the majority of FOPs are "blueprints" without consideration for unique forest qualities and socio-economic configurations. The increasingly technical requirements for preparing the FOP, specifically the Forest Inventory, increase dependence on decreasingly available technical support from the DFOs. The heavier workloads results in the "blueprint" approach to preparing FOPs, limiting potential for developing FOPs that reflect the needs of socially disadvantaged groups (Singh and Nepal 2002a).

Social Equity

> *"Getting a fair share, not necessarily an equal share" (Messerschmidt 1981)*
>
> *"The crucial point is that cooperative resource management depends on people perceiving themselves as getting a 'fair share' of or 'fair access' to tangible benefits from their cooperation, or see a likelihood of this happening in the future." (Fisher 1989)*

It is relatively recently that social equity became an indicator in community forestry. The 1993 Forest Act gave CFUGs authority to spend funds for local community development activities. In 1998, the Third National Community Forestry Workshop endorsed the link between community forestry and poverty alleviation. The 1999 Amendment to the 1993 Forest Act specified that a minimum of 25% CFUG funds are to be spent on CF management and an unspecified amount available for community development (Annex A).

Although guidelines for physical inventory of the forest have been developed, there are no guidelines for socio-economic inventory of the user group. There is no differentiation between rich and poor in terms of basic forest product distribution. The researcher noted "*not a singe sampled CFUG has subsidized forest product prices for the poor and Dalit … All the users are equally treated, which is not socially justifiable*" (Singh and Nepal 2002a). There are no guidelines for "social equity," but this research activity ranked Pyuthan and Bardia, of the five sampled districts, the lowest for social equity (Singh and Nepal 2002a).

The researcher observed that there are no guidelines for CFUGs supporting community development. Singh and Nepal note that many of the community development activities supported by CFUG funds

do not directly benefit the poor, landless and marginal CFUG members, such as: irrigation canals, roads, schools, large communal cooking utensils, etc.

Box 6: Social Equity Issues

> *"in Dang district there is an average of 29% landless and marginal families, but there are no programs for the poor in the FOPs."*

Source: Singh and Nepal 2002 a

Although the poor and marginal equally contribute for community forest management and protection, the returns are inequitable in terms of forest products and services when compared to influential and wealthier households. The research findings highlight social equity as a weak area requiring more focused effort in the future.

Table 9: Indicators for CFUG Decision-making, Documentation & Dissemination

SN	Indicator	1995[5]	2000 target	2002 findings
1	Deliberation of issues and problems in open meetings	50%	80%	61%
2	Decisions through active discussion leading to consensus	25%	50%	78%
3	Documentation of decisions	10%	50%	78%
4	Posting key decisions in community halls and sharing with NFE classes or Community Reading Centers	---	50%	49%
5	Communication process within CFUGs and outsiders	---	---	68%
6	Ordinary members aware of key decision and overall financial status	---	50%	56%

Source: Singh and Nepal 2002a

Deliberation, Discussion and Decisions

The General Assembly meetings and FUC meetings are regularly conducted, with some exceptions. The meetings take between 2-4 hours, with the Chairperson or Secretary facilitating. The General Assemblies require 51% attendance, which can be difficult in the larger CFUGs. If attendance is insufficient, the meeting is recalled and the requirement for attendance is reduced to 25%. The research found that the sampled CFUGs have significantly increased achievement towards these indicators. The variation in achievements in the different districts would be useful to analyze in terms of identifying the factors for greater success. For example, why are the sampled CFUGs in Dang and Banke districts stronger in deliberating issues in open meetings, whereas the sampled CFUGs in Dang and Bardia districts were more successful in making decisions by active discussion, while the sampled CFUGs in Dang and Kailali districts showed the least achievement in terms of documentation of decisions.

The CFUGs are increasingly making decisions on a consensus basis, rather than majority, which leads to increasing cooperation and equity. But influential people still dominate. In CFUGs where timber is sold commercially, the contractors also indirectly influence decision-making (Singh and Nepal 2002a).

Documentation, Dissemination and Communication

[5] Baseline information only included the five Rapti Zone districts, where a USAID funded integrated rural development project was operational prior to EFEA.

Sampled CFUGs show that documentation of decisions has improved significantly, but dissemination and communication of information is still weak (Singh and Nepal 2002a). Documentation of decisions regarding forest products, protection and management activities, dates for opening forest areas for collection/harvesting, forest product auction notices, as well as financial information regarding the CFUG fund income and expenses are documented by most CFUGs in their register.

Many CFUGs post notices about decisions on CFUG office notice boards, community halls, teashops, schools, temples and Community Reading Centers. A few CFUGs have also issued information in newspaper advertisements and FM radio.

Traditional communication systems are also being used for community forestry: in Bardia the "*Badaghar*", in Daukari valley the "*Agaria*" and in the hills, the "*Katuwal*." The *Badaghar* and *Agaria* are annually elected positions by consensus while the *Katuwal* are inherited positions, usually low caste, and paid by the community.

The research found that internal communications, between the FUC and ordinary members is generally weak, with Bardia district lagging behind other districts. There is no specific target to get information to women, poor and disadvantaged households. There is no direct linkage between the NFE classes and dissemination of information from and about the CFUG; there were no females involved in internal communications in any sampled CFUG. Singh and Nepal's findings concur with Bajracharya et al's research findings on the NFE programming (section 2.3.4).

Ordinary Members Aware of Key Decision and Overall Financial Status

Singh and Nepal reported that annual financial auditing is done by most CFUGs and read in the General Assembly meetings. Subsistence CFUGs are more transparent than commercialized CFUGs. Ordinary members of CFUGs providing loan funds are usually more attentive to the CFUG financial status.

Generally however, the researcher found that most of the ordinary members and especially the poor, Dalit and women are not aware of the CFUG financial status; information is limited to the FUC officers. In resource rich CFUGs, covert arrangements are made between contractors and influential CFUG members for profitable timber sales.

In summary, overall, the researchers found good progress in terms of CFUGs increasing their democratic functioning. Three indicators were found to be weak: ordinary users aware of rules, regulations and rights; posting decisions and sharing information with the NFE classes; and social equity. Recommendations are to use the NFE forum to reach women, poor and marginalized households; establish processes for socio-economic inventory within the CFUG to identify the target group of poor, women and Dalit; and focus services on increasing social equity within the CFUGs.

2.3.5 Impact on Livelihoods, Equity and Gender Issues

This set of research activities looked at the impact of community forestry project activities on the rural poor in terms of community development and sustainable rural livelihoods, specifically looking at equity issues and the flow of benefits from community forestry. The research activities were conducted during the last three years of the EFEA/FPP in districts in the hill, Tarai and Inner Tarai ecological zones. The summary of findings from this set of research activities focuses on the crosscutting issues of Tarai community forestry, user identification, secondary user access, and etc. that are also discussed in some of the other research papers.

Table 10: List of Research Activities: Impact on Livelihoods, Equity and Gender Issues

Author	date	Research Activity Title
Bushley, Bryan	Jul-02	User Perceptions of the Impacts of Community Forestry on Community Development in Nepal Western Tarai
Paudel, Mani Ram	2002	An Assessment of Community Forest on Sustainable

		Rural Livelihood (A Case Study from Sher Khola CFUG Pyuthan)
Ghimire, Loknath	2002	Assessment of Impact of Community Forestry on Rural Poor.
Kafle, Prem Kaji	Feb-01	Equity Issues in the Terai Community Forests of Nepal (A Case Study in Dang District of Nepal)
Gentle, Popular	2000	The Flow and Distribution of Community Forestry Benefits: A Case Study from Pyuthan District, Nepal
Takimoto, Asako	Feb-00	Impact of Community Forestry in Banke and Bardia Districts of Forestry Partnership Project
Klatzel, Frances	1999	Forestry Partnership Program: Terai Communities are Managing their Forest Resources with Support of the DFO and CARE Nepal

Forest Condition and Forest Product Availability

Researchers' findings indicate that after community forest handover, forest conditions and vegetative cover have improved as a result of the CFUGs' efforts in forest protection, enrichment planting, and forest management and silviculture practices (Bushley 2002, Paudel 2002, Takimoto 2000, Klatzel 1999)

Forest product consumption was used as a proxy indicator to measure the change in forest condition (Bushley 2002).

Box 7: Access to Fuelwood Less Equitable Since CFUG Formation

> "Although the amount of fuelwood consumed has increased for a majority of all households, whether Disadvantaged or non-Disadvantaged, the above results seem to suggest that access to this vital forest product has become less equitable since CFUG formation"

Source: Bushley 2002

Equity and Flow of Benefits from Community Forestry

Although researchers found that forest products are increasingly available in the community forests, closer examination of distribution reveals disparities in availability for different socio-economic groups (Bushley 2002, Ghimire, L. 2002, Gentle 2000, Takimoto 2000).

Box 8: CFUG Restrictions Limit Forest Product Access for Poorer Households' Livelihoods

> *"… we need mature heartwood for charcoal but we are not allowed to carry out any harvesting tools in the CF during fuel wood collection, how can we collect fuel wood for charcoal?"*
> -- Charcoal maker in focus group discussion

Source: Gentle 2000

In the Tarai, almost 20% more of the wealthier households reported an increase in the amount of fuel wood consumed compared to poorer households, while 3 times number of poorer households reported increases in the time required to collect fuel wood, fodder and timber (Bushley 2002). Takimoto (2000) found similar responses that the forest conditions have improved, but access has been restricted by the CFUGs. She observed that disadvantaged groups were worse off in general, and had had fewer opportunities to participate in the trainings and FUC decision-making processes (Takimoto 2000).

In Dang district, the Inner Tarai, Kafle (2001) found that the interviewed resource-poor CFUG members perceived equitable distribution of forest products, while in the sampled resource-rich CFUG, where timber is commercially marketed, *"most of the users say that the system is not transparent and allocation of funds is not equitable."*

The tendency of the Tarai CFs with mature natural Sal forests is to manage for timber production, which ends up generating more benefits for wealthier households at the expense of poorer households who are not meeting their basic forest needs.

Box 9: CFUG Timber Distribution Becomes More Equitable

EFEA – FPP influenced the Tikuri CFUG in Pyuthan District to revise its timber distribution system during the FOP renewal process. Previously, they had an auction system that was biased against poorer households who do not have the cash resources to bid in an auction system. During the FOP renewal process, they decided to revise the timber distribution to include a minimum free allocation for CFUG members, and have a fixed rate for sales.

Source: Gentle 2000

In Dang district, representing the hill situation, a cost / benefit ratio analysis of three socio-economic categories shows that the medium category is benefiting most, second are the rich and the poor households have the lowest cost / benefit ratio (Ghimire, L. 2002). These findings concur with Gentle (2000)'s research in Pyuthan showing that after CF handover, the poor and disadvantaged households' had reduced access to forest products due to CF restrictions in general, and specifically due to their lower representation and participation in CFUG committees.

Box 10: Perceptions of CFUG Equity by Different Socio-Economic Respondents

Research statement:
Forest products sale and distribution system is good.
Poor and disadvantaged respondent households disagreed.
Wealthier, advantaged respondent households agreed.

Source: Gentle 2000

Socio-economic analysis of changes in forest product collection times shows that: "*A considerably larger proportion of "poorer" households than "richer" households reported an increase in collection times for all five key forest products… 2.8 times as many "poorer" households than "richer" households reported an increase in collection time*" (Bushley 2002).

In summary of his research on the flow and distribution of CF benefits, Gentle states that: "*about one-third of the respondents (who are 68% poor and disadvantaged) reported that there was discrimination in benefit-sharing of CF."* The discrimination was perceived to be slightly more economic based rather than caste based (Gentle 2000).

Link between Forests and Agriculture and Livestock

It is estimated that 2.8 ha. of forest land are required to support one hectare of agriculture land for subsistence production in terms of supplying organic matter for compost production and more general watershed conservation (Wyatt-Smith 1982, cited in Gentle 2000). Researchers asked respondents to estimate the change in agricultural production before and after handover of community forests. Generally, respondents indicated a reduction in agriculture production, especially for the poorer households (Gentle 2000, Ghimire, L. 2002, Paudel 2002).

The perception of reduced agricultural production is attributed to the reduction in livestock numbers after the community forests were handed over with restrictions on grazing and collecting fodder (Ghimire,L. 2002). In Pyuthan, respondents estimated a 48% reduction in livestock population in the last five years (Gentle 2000). However, analysis shows that the grazing control in the CF affected sheep and goats more than buffalos and cows that were stall fed prior to CF and supply more manure than sheep and goats.

Gentle (2000)'s research in Pyuthan found the poorer households reporting declines in agriculture production over the past five years that are attributed to the general socio-economic conditions of the poor.

Box 11: Declining Agricultural Production Perceived by Poorer Households

" we don't need more compost,
although it has increased in the forests and is available free of cost,
because we have very limited and fragmented landholdings
and decreasing number of livestock.
So, our farm production is decreasing day by day."

Source: Gentle 2000

Indirect benefits from community forestry to agriculture productivity were identified including farmland and watershed conservation and increased nutrient flow through the increased CF biomass enriching irrigation water (Gentle 2000). This supports Paudel (2002)'s findings in the sampled CFUG that Khet production increased while Bhari land production was unchanged.

Current CF management practices are oriented towards production of intermediate products such as compost supportive of the farming systems. Therefore, people who have more farmlands benefit more from the forest products (Gentle 2000).

Community Forest User Group Executive Committees

The research shows significant improvements in representation of major groups in the Forest User Committees (FUC) in terms of women, ethnic groups, low caste people and poor (Bushley 2002, Gentle 2000, Singh and Nepal 2002a). The NFE classes have had a direct and positive impact on increasing women's confidence to participate in FUC meetings (Bajracharya et al 2002, Singh and Nepal 2002a). But overall, women and disadvantaged group people do not have equal representation in the key positions on the FUCs which contributes to a vicious cycle of lower awareness, lower participation, less access to information, and fewer benefits (Bushley 2002).

The FUCs have three key positions, chairperson, secretary and treasurer. Analysis of distribution of the key FUC positions by socio-economic and ethnic/caste/gender categories, shows that influential and wealthy persons dominate the key FUC positions (Ghimire,L. 2002, Gentle 2000). Ghimire (2002) presents a table showing the FUC positions and socio-economic groups, and found that although the poor and disadvantaged are included in the FUC, they only hold member status; they do not hold any key FUC positions. In Pyuthan district, Gentle's findings are similar "*poor and disadvantaged, if elected to FUC, were only in general positions and for short periods."* The influential and wealthy people in CFUGs dominate the FUC and are influencing CFUG decision-making to their benefit (Gentle 2000, Bushley 2002, Ghimire,L. 2002, Kafle 2001).

Community Development Activities

The 1993 Forest Act gives the legal mandate for community forestry in Nepal to directly address poverty alleviation by supporting local community development. There are no specific guidelines on the amount CFUGs allocate for community development activities.

Generally, the researchers found about 25% CFUG funds expended for community development (Section 2.3.3 Box 3; Bushley 2002; Ghimire,K. 2000). The activities vary but include: school support, NFE support, training, community hall construction, CFUG office, nursery, roads/trails, drinking water, pig husbandry program, irrigation, and loan funds (Ghimire,K. 2000; Klatzel 1999; Bushley 2002; Paudel 2002; Kafle 2001).

Box 12: Inequities in Community Development Activities Supported by CFUGs

"Many community development works have been done by CFUGs which do not directly benefit to landless and marginal users, such as, construction of irrigation canals, roads, trails, schools and so on. Also, big size utensils are purchased for communal feast but poor members are not able to afford for such community events; likewise, poor families do not have private land to irrigate but group fund is invested for construction and maintenance of irrigation canals which do not benefit them. Actually these community development works are not the priority of the poor and Dalits at all. In some CFUGs, those families which suffered from natural calamities are given timber free of cost for house construction though"

Source: Singh and Nepal 2002a

In Pyuthan, the research activities found that there was "*no investment in IGA which can be a potential source of income and employment generation for poor and DAG people… The (loan fund) activity was oriented towards profit making to user groups rather than to support the poor users to raise their household income. In reality, the loan was given to those users who were assumed to have sufficient property to return the loan*" (Gentle 2000).

"Research found that sampled CFUGs have an average of almost 30% landless and marginal families. But there is no program for the poor in FOP. Though, the price of fuel-wood, timber and other forest product is very low compared to local market, there is no subsidy for the poor" (Singh and Nepal 2002a).

Bushley (2002) concluded *"the CFUGs are not taking full advantage of opportunities to fund important community development activities. While infrastructural projects are being built, very few resources are being spent on such areas as medical and education supplies or teacher salaries, which are vital to the socio-economic well-being and development of the community in the longer term."*

In summary, the researchers found that community forestry has had a positive impact on forest condition and vegetative cover, with a general increase in forest products. However, socio-economic assessment showed that distribution of forest products and benefits from community forestry are inequitably distributed amongst CFUG members. Researchers found that the elite and wealthy households dominate the Executive Committees and bias CFUG support to community development activities that disproportionately benefit the wealthier households.

A couple researchers extended the vision of equity beyond the CFUGs by pointing out the inequitable access by traditional or secondary/tertiary users who live further from forest areas than the recent hill migrants, and have been excluded from the CFUG membership and community forest products.

2.3.6 Support Services to CFUGs

Up to this point, the research activity categories have focused on the CFUGs, their performance, the members' perceptions of impact and researchers' assessments of impact and crosscutting issues. This section shifts the focus from the CFUGs to the support services for the CFUGs. This group of research activities predictably includes two activities focusing on Post-Formation Support, one activity included visiting 76 CFUGs. The third research activity examined the impact of Non-Formal Education classes on increasing women's confidence to participate in CFUGs. This research activity had a large sample of 30 CFUGs.

Table 11. List of Research Activities: Support Services to CFUGs

Author	Date	Research Activity Title
Bajracharya, KM, Hima Devi Uprety and Ashika Shrestha	Sep-02	Impact of Non-Formal Education Program on Community Forestry Development (in Kailali, Banke, Bardia, Dang and Pyuthan)
KC, Sher Bahadur	Feb-02	Post Formation Supports for Community Forest User Groups for their Sustenance (A Case Study from Pyuthan District)
Chhetri, Ram B. and	May-99	Study on Post Formation Supports for Community Forest Users

Harihar Sigdel	Groups: Comparing the Hills and the Tarai

NFE Program Impact on Community Forestry Development

FPP supported non-formal education classes graduating over 20,000 women through over 1,000 NFE classes (Bajracharya et al 2002). Women gained confidence as they gained literacy and knowledge.

Box 13: NFE Status in EFEA

162	Partners involved
19,424	Participants enrolled
7,984	Dalits enrolled
14,656	Participants graduate
6,681	Dalits graduate
764	Facilitators trained
571	Women facilitators trained

Source: FPP Project Implementation Report FY 2001

The NFE courses provided a forum for women to gather and learn together, to overcome their shyness, learn to sign their names, gain confidence in public speaking, and learn science based information on environment, community forestry and home sanitation and management. The NFE courses supported the growing trend of forming all-women CFUGs that tend to be highly democratic and transparent. KC (2002)'s research in 3 CFUGs in Pyuthan also confirms the positive impact of NFE on women's participation in community forestry.

Bajracharya et al (2002) found the course material and teaching approach could be improved with more "learning by doing" demonstrations of technical forest management practices and other skills development. The linkage between community forestry and the NFE courses can be built upon by sharing CFUG constitutions, FOP, rules and regulations, and key decisions in the NFE courses for discussion by NFE participants (Singh and Nepal 2002a).

Fifty (50) Community Reading Centers were established and supplied with reading materials to support retention of NFE course information. However, the women have too much house, farm and forest work to make use of the CRC, and also that the reading materials were too advanced and presented in small type which the newly literate women find difficult to read (Bajracharya et al 2002).

The resounding lesson learned from this research is that NFE courses can have a significant impact on women's level of confidence and encourage more active participation in community forestry. This is a concrete, tested approach for focusing on the poor and marginalized people in a community and enhancing their capacity to participate in and benefit more fully from community forestry specifically and community development more generally. The NFE program operation cost was about US$6.50 (about NRS 500) per graduate.

Post-Formation Support

Post-Formation Support is provided to CFUGs primarily by the DFO staff. Under FPP, CARE Nepal supported the DFOs in their implementation programs, the WDO supplemented the DFO training support to CFUGs, and local clubs also provided support to CFUGs (KC 2002). KC observed that the CFUGs closer in proximity to the DFO received proportionally higher support services compared to more distantly located CFUGs.

Table 12: Distinguishing CFUGs Post-Formation Support Required

Newer CFUGs require:	**More established CFUGs require:**
➢ Awareness raising	➢ Active forest management skills
➢ Awareness about constitution	➢ Forest Inventory

and FOP	
➢ Conducting General Assemblies and monthly meetings	➢ IGAs
➢ Fund mobilization	➢ NTFP management
➢ Record-keeping skills	➢ FOP renewal
➢ Gender sensitization	➢ Networking

Source: KC 2002

KC's research in 2002 was conducted three years after Chhetri and Sigdel (1999). KC (2002) builds on Chhetri and Sigdel's earlier work by refining the list of Post-Formation Support required by differentiating the needs of New CFUGs compared to more established CFUGs.

The CFUGs with larger forest areas, larger number of member households and heterogeneous groups were found to require more PFS than smaller CFUGs with homogeneous membership. CFUGs with higher female representation are more active, and require less support than less active CFUGs dominated by males. KC (2002) also highlighted the positive impact of NFE for increasing women and poor CFUG members' awareness of CFUG issues and procedures, increasing their active participation in the CFUG management, and increasing their representation on the FUC.

Researchers observed that influential people and FUC members dominate PFS training opportunities, resulting in disproportionately lower participation of disadvantaged people in trainings and other capacity building opportunities (KC 2002; Takimoto 2000).

The networking workshop conducted at the Range Post level had a positive impact on CFUGs and Range Post planning (KC 2002). This conclusion concurs with the findings that neighboring CFUGs exert significant influence on other CFUGs (Ghimire, K. 2000). The Range Post level workshop also practiced and promoted 'need based, bottom up planning' approaches.

The demands on DFO staff for CFUG support services are increasing, especially with the newly required Forest Inventories with their complex Guidelines, as well as the added responsibilities to support CFUG community development programming. However, the DFO staffing numbers have not increased, and training is insufficient, resulting in inadequate support services to the CFUGs to manage the forest resources (KC 2002, Chhetri and Sigdel 1999).

DFO Staff Training Needs

At the time of Chhetri and Sigdel (1999)'s research, PFS was not formally part of the CF implementation program, and EFEA DFOs and a few others were piloting PFS activities. Chhetri and Sigdel assessed CFUG training needs, as discussed above, and equally stressed that the DFO staff requires training in order to effectively support the CFUGs. The recommended DFO trainings were categorized by staff positions: Officer level, Ranger/Community Forestry Extensionist level, and Forest Guards.

Follow up on Chhetri and Sigdel (1999)'s recommendations was initiated in February 2000 with an internal FPP workshop to develop an Action Plan for PFS.[6]

Bhatta and Lamsal (2000) expand on the changing roles of the DFO staff, from forest protection to community forest extension agents, concurring with Chhetri and Sigdel's recommendations for DFO staff training.

Comparison of Hill and Tarai CFUGs

Chhetri and Sigdel (1999) sampled 76 CFUGs and compared Tarai and Hill forest situations. Some of their findings are presented below. Their findings show that in 1999, the Hill CFUG members got

[6] Reference: Undated FPP document entitled "Action Plan for Post Formation Support" p. 15.

more forest products from Community Forests compared to Tarai CFUGs, while the Tarai CFUG members depend much more heavily on National Forests. However, the Tarai OFMPs identify a small portion of forest area as suitable for Community Forests.

Table 13: Comparison of Tarai and Hill CFUG Respondents

Questions	Tarai %	Hills%
Forest products from CF	13	35
Forest products from NF	70	15
OFMP Potential CF Area	5-6	30-60
Users identified properly	83	87
CF area identified properly	83	74
Harvested FP	53	72
Marketed surplus FP	37	13
Processing FP (timber & NTFP)	23	0
Manage IGA	23	15
CFUGs funding Community Development	43	35

Source: Chhetri and Sigdel 1999

User Identification: Pre-Formation Support

The data in Table 13 for "proper user identification" are equally high and not significantly dissimilar in the Tarai and the Hills. This reflects the perception of the users who were included in the CFUG. Since the research activities focused on CFUGs, generally the non-members, the people who were excluded from the CFUG, were not interviewed.

Box 14: Negative Impacts on Households Excluded from CFUGs

> *"…forest users who are not CFUG members are also affected by the project. Since forests that were already far from their settlements were handed over to other communities, they have to go much farther national forests to collect forest products. This negative impact of the project should not be neglected."*

Adequate support during the Pre-Formation Support phase affects the level of Post Formation Support required by CFUGs. Future research could look at the broader issues of equitable access to and benefits from forest resources in terms of developing a socio-economic inventory process for forest sector management planning.

Tarai Community Forest User Identification

In the Tarai, community forest user identification is complicated because the influx of hill migrants moved into areas close to the present forest areas. The indigenous Tharu people, living in their original lands, now find themselves now living far from the receding forest resources, and often excluded from the CFUG formed by the migrants near the forests (Bushley 2002, Klatzel 1999).

Tarai Community Forest Access for Secondary Users

Klatzel (1999)'s CFUG case study in Banke district looked at the CFUG's rationale and system for including secondary users, and identified this inclusion of secondary users as an indicator of a successful and sustainable CFUG.

Box 15: Innovative CFUG Provision for Secondary User Access to CF

> *" We let outsiders come to use our community forest for a low fee because we need their support. They need the forest products and if we did not allow them access they would cut trees illegally and set fires. This way they support protection of the forest."*
>
> *Gijara CFUG, Banke district*

Source: Klatzel 1999

None of the research activities focused on the issue of identification of primary and secondary Tarai community forest users, or looked at the issue of equity from the perspective of people who were excluded from the CFUG, although many researchers mentioned the problem. This is an area that future research for community forestry should address.

Unclear Tarai forestry policies and guidelines

The comparison of Hill and Tarai community forestry underlines the constraint of the unclear policy and guideline for Community Forestry in the Tarai (Chhetri and Sigdel 1999). *"It is obvious that the modality of CF in the Tarai should be a different one than those of the hills to address the complex forestry problems pertaining to Tarai"* (Bhatta and Lamsal 2000). Bhatta and Lamsal recommends development of an integrated forest development plan that resolves legislative contradictions and provides clear policy guidelines for Tarai CF addressing the issues particularly related to the OFMP, CF area selection, primary and secondary user identification and utilization and distribution of forest products.

In summary, support services to CFUGs first needs clear national policy to guide the district level DFO support, especially for Tarai forestry management. The research activities on Post Formation Support indicated that CFUG requirements for technical, managerial, and social support services are increasing, while DFO staff training and numbers are inadequate to meet the demands. NFE study showed the potential for other district level services to complement the DFO support services to CFUG members, especially targeting support to the poorer households to increase their active participation in CFUG issues and decision making.

2.3.7 Private Forestry and National Forests

This group of research papers goes beyond community forestry, looking at national and private forestry and exploring the broader issue of Tarai and Inner Tarai forest sector development.

Table 14: List of Research Activities: Private Forestry and National Forests

Author	Date	Research Activity Title
Budhathoky, Pradeep	Feb-02	Impact Analysis of Community Forestry on Private Owned Forest (A Case Study of Dang District)
Bhatta, DD and RP Lamsal	Dec-00	Impacts and Implications on National Forests by CFUG (A Case Study of Banke and Bardiya Districts)
Poudel, IP	2000	A Case Study Report of Status of Private Forestry in Bardia District
Nepal, Prakash	1999	Survey of Private Forests: A Case Study of Two Municipalities in Dang District

Private Forestry

Budhathoky (2002) found a positive influence from the development of CF on the establishment of private forests (PF), and describes a trend of increasing PF development following CF handover, increased awareness of forest management and enforcement of restrictions in CF harvesting.

His analysis compared forest product supplies from PF and CF: Fodder collection from PF was higher than from CF; whereas fuelwood collection was higher from CF than PF; and timber was only available in the resource-rich CFUG because the forest is mature, while the resource-poor CFUG nor either of the private forests have mature timber yet (Budhathoky 2002).

Box 16: Potential for Private Forestry to Supply Basic Forest Products

> *"Private Forestry can significantly add to fodder and fuelwood resources and reduce the pressure on both CFs and NFs."*

Source: Bhatta and Lamsal 2000

Gentle (2000)'s research concurs with Budhathoky (2002)'s findings on fodder use. Gentle disaggregated socio-economic groups to analyze benefits from forest products. In sampled CFUGs in the hills, Pyuthan district, research found that consumption of fodder from the CF had decreased for all socio-economic groups, but slightly more for the poor and disadvantaged households. The rich were able to meet 34% of their fodder needs from their private forestry fodder resources, while the poorer households with limited landholdings could only meet 1% of their fodder requirements from private forestry. Richer households have better access to CF, and have more private land for private forestry. Poorer respondents indicate a higher dependence on National Forests (Gentle 2000).

Case studies on private forests in Dang and Bardia districts found that a majority of farmers practice some level of private forestry with scattered plantings of multi-purpose trees (Nepal 1999; Poudel 2000). The main motivation for private forestry in Dang was profit; in Bardia the motivation was reported as a combination of influence from NGOs, readily available seedlings, and the surrounding CF (Poudel 2000).

One example of FPP incorporating research recommendations is seen in the establishment of local nurseries. In 1999, Chhetri and Sigdel noted that there were no user managed nursery facilities in Dang, Bardia and Banke districts during the research fieldwork period. By July 2001, 39 community-based nurseries were established in five FPP districts. Future research could disaggregate data on who established and operates the nurseries, and whether there is potential for poorer households to benefit indirectly from private forestry by producing seedlings and selling them to the wealthier households.

Box 17: FPP Private Forestry Planting including Disaggregated Data for Dalits

"During this fiscal year (2000/2001) the FPP supported over 3,000 households in Dang, Salyan, Banke and Bardia districts to plant over 280,000 seedlings on over 176 hectares of private land. This includes almost 1300 Dalit households."

Source: FPP-Project Implementation Report. July 2001

Poudel (2000) found that local seedling availability was one of the motivating factors for farmers to plant trees on their private land. The preferred species are Sissoo, Bakaino, Ipil-Ipil and teak (Poudel 2000; Nepal 1999). The case studies found that women are only marginally involved in Private Forestry, and that species preference did not reflect women's preferences (Nepal 1999).

The main constraint for expanding private forestry is land availability (Poudel 2000). Most sampled private forest owners had more than two Bigha of land, with many having more than four Bigha land (Nepal 1999). The private forest owners are larger landowners, therefore richer households. So private forestry directly benefits the wealthier households, but is perceived to be indirectly benefiting the community as a whole by generally contributing to an increase in the supply of forest products (Poudel 2000).

National Forest Management

The focus of FPP was on private and community forestry development. However, the researchers have found that community and private forest resources are not able to adequately supply basic forest products (Bhatta and Lamsal 2000; Gentle 2000; Nepal1999; Chhetri and Sigdel 1999). *"As a result, most CFUG members directly or indirectly use their nearby NFs heavily. Therefore, the NFs have suffered for the betterment of CFs*" (Bhatta and Lamsal 2000).

Box 18: Socio-Economic Differences in Levels of Dependency on National Forests

75% of the resource-poor CFUG respondents reported harvesting forest products from National Forests compared to only 40% of the resource-rich CFUG respondents.

Source: Budhathoky2002:33

Especially in the Tarai, where National Forests are adjacent or close to Community Forests, and user identification for CFUGs has excluded users from traditional forest areas, the researchers found a continued heavy reliance on National Forests (NF) for key forest products (Bushley 2002; Takimoto 2000). Some interviewed CFUGs denied using the NF resources; while others openly stated that the CF resources are insufficient due to either restrictions in harvesting or the young age of CF plantation on scrubland (Bhatta and Lamsal 2000). CF protection has been at the cost of National Forests (Singh and Nepal 2002a).

CF size guidelines

There are no guidelines for forest size relative to number of users. There is a wide range in the CF hectarage/household (Table 7 illustrates the wide range in sizes of sampled CFUGs by different researchers) . *"Many participants actually suggested that minimum and maximum area of forest per household should be fixed"* (Singh 2002b).

Table 15: CF hectares / household in Tarai and Inner Tarai

District	Bhatta's sample	Ghimire's sample
Banke	0.85 – 1.54	0.15 – 2.45
Bardia	0.33 – 0.42	0.12 – 0.60
Dang	0.21 – 0.59*	0.02 – 3.39

Source: Bhatta and Lamsal 2000, K. Ghimire 2000, Deo 2002 (* Deo's sample)

"The size of the community forests should be determined during the process of handover in such a way that it can fulfil the needs of CFUG. Sustainable CF management is possible by CFGs if their needs are fulfilled by proper management of CFs and the size of CF is one of the factors playing the vital role" (Bhatta and Lamsal 2000).

Protection Status

All CFUGs have developed a sense of ownership, and a forest protection systems (Bhatta and Lamsal 2000; Ghimire,K. 2000; Bastakoti 1999). Forest protection varies from CFUGs hiring and paying forest watchers to voluntary rotation guards by members. CFUGs have established rules and regulations for fines and penalties effectively reducing encroachment and illegal harvesting. The increasing protection of the CF, has resulted in increasing encroachment on National Forests.

Forest Users Using National Forests

Based on the Hill community forestry model, Tarai CFUG members are identified in close proximity to the forest area. However, the research shows people travel considerable distances to illegally collect forest products from the National Forest areas. Nearby CFUG members walk 2-7 km to use NF areas. Non-CFUG members, people who have not been included in a CFUG, will travel up to 30 km to collect forest products from National Forests in Bardia district. The NFs around CFUGs are badly degraded (Bhatta and Lamsal 2000).

In summary, private forestry has increased with the growing awareness of community forestry, and is contributing to the supply of forest products, but primarily for wealthier households with larger landholdings. Especially the poorer households and the households excluded from CFUGs are heavily dependent on NF for basic forest products. The district level forest development planning, the Operational Forest Management Plan needs to integrate forest planning for social equity (see section 2.3.8).

2.3.8 Policy Issues

The objective of this research activity was to assess the impact of recent community forestry policy changes (ANNEX A) on CFUGs and other stakeholders, with a sample of 20 CFUGs in Tarai and Inner Tarai districts of Banke, Bardia, Kailali and Dang.

Table 16: List of Research Activities: Policy Issues

Author	Date	Research Activity Title
Singh, Bijay Kumar (Nepal Foresters' Association)	Jul-02	Impact Study Report on New Policy in Community Forestry with reference to Banke, Bardia, Kailali and Dang Districts

2000 Amendment to the CF Directive 1995

The Community and Private Forest Division issued the "Guidelines for Inventory of Community Forestry" to support CFUG users and DFO field staff to generate information on growing stock, annual increment and allowable harvest of forest products, and enable more scientific forest management. There have been problems implementing the Guidelines due to lack of adequate training for DFO Rangers, lack of sufficient equipment, work overload with CFUG pre and post formation support activities and the increasing number of CFUGs. "*The quality of inventory work is questionable*" (Singh 2002b).

FECOFUN claims that there is no legal basis for the Forest Inventory in the Forest Act 1993, rules and regulations. Some CFUGs reported misuse of the Forest Inventory by FUC members to enable them to harvest timber and sell it directly to contractors. (Singh 2002b)

Both DFO officials and staff and the CFUG members appreciate the objective of the Forest Inventory which is to systematically assess forest resources and generate information for sustainable forest management and planning (Singh 2002b).

But the complexity of the Forest Inventory process increases CFUG dependency on DFO staff for measurements, recording, calculations and analysis (Singh 2002b). CFUGs with expiring FOPs need support to implement the Forest Inventory, but no increase in the DFO staff numbers results in delayed renewal of FOPs. The expired FOP means the CFUG's right to harvest forest products has also expired (Singh 2002b). Table 17 shows the average rate of FOP expiration by 2006 in these districts will be 50%.

Table 17: CFUG FOP Expiration Rate

District	# of CFUGs	CFUGs' FOPs Expiring by 2006	
		#	%
Dhading NRMP-DRMP (1985-2002)	190 35	115	60
Kailali	54	21	38
Banke	46	37	80
Bardia	92	64	70
Bardia Buffer Zone	1	-	0
TOTAL	**418**	**237**	**AVERAGE 50%**

Source: CARE Nepal SAGUN Program Technical Application (2002:Annex 1)

May 2000 New Forestry Concept for the Tarai, Inner Tarai and Chure Forests

ANNEX A lists the 7 points of the New Forestry Concept for the Tarai, Inner Tarai and Chure Forests. Singh focuses on the following two regressive points in that legislation:

a) Identification and handing over of only barren forestland, shrublands and isolated forest patches (separate from the contiguous forest block) to local population as community forest

The researcher observes that this policy limits not only the quantity of forest land available for community forests, but also the quality of the forest. The researcher concludes that this regressive legislation contradicts the Master Plan for the Forest Sector 1988 that states, "*phased handover of all accessible forest to the communities to the extent they are able and willing to manage them*" (Singh 2002b).

The Operational Forest Management Plan (OFMP) is the district level forest management plan. It is the basis for forest management activities and distribution of resources within a district. The OFMPs for Banke, Bardia and Kailali were approved May 1998 (expire in 2003). The Five Year Plan for Dang was prepared in 1990, but not implemented properly, nor updated.

Table 18 shows the percentage of total forest area identified as potential community forest area is lower in the Tarai than Dang. The demand for forest area is shown most dramatically in Banke where only 3% of the forest area is designated as Potential Community Forest and 96% of that has already been handed over.

Table 18: OFMPs' Potential CF Areas in the Tarai and Inner Tarai

Ecological Zone	Districts	Potential CF: % of Forest Area	Handed Over area: % of PCF
TARAI	Banke	3	96
	Bardia	12	48
	Kailali	6	47
INNER TARAI	Dang	43	72

Source: Singh 2002b referenced from FPP Brief 2002

The OFMPs for Banke and Bardia have created more confusion than clarity due to these weaknesses (Bhatta and Lamsal 2000):

- The OFMP forest resource inventories do not represent the field reality,
- The criterion for identifying potential CF area is not clear,
- Less emphasis on CF and very less area is proposed for CF, and
- People's participation and their roles, rights and responsibilities are unclear.

The research found that forest users perceive the OFMP as a barrier for handing over community forest. The perception is that the limitations on forest quality and quantity available for handover are a regression to Panchayat Forest Management rules of 1978 (Singh 2002b).

b) Sharing 40% of the selling price of surplus timber with government for program purpose

Box 19: Contradictory Forestry Legislation

> "The hot issue of sharing 40% of sale value of surplus timber to outsiders from community forestry is neither consistent with Forest Act 1993 nor other HMG financial rules"

Source: Singh 2002b

The second key research finding is that CFUGs are in favor of allocating CFUG funds for local community development, but are do not approve of the regressive and contradictory legislation, the

arbitrary calculation, the non-consultative process, and the lack of information about "program purpose" (Singh 2002b).

HMG has not defined the "program purpose" that the 40% share is collected in the name of, and there is no information available (Singh 2002b).

In practice, the researchers found that DFOs in the four surveyed districts are collecting 40% share from sales of surplus timber, but not the 10% VAT. FECOFUN traced the deposit of these revenues to the Government Revenue Account and filed a case questioning the legality of the fund management (Singh 2002b).

Despite the non-participatory decision to establish the tax, the arbitrary percentage share, and long bureaucratic procedure for paying the share, some CFUGs reported agreement that the CFs contribute directly to poverty alleviation by allocating CFUG funds for community development activities (Singh 2002b). Establishment of a transparently managed revolving fund to support technical assistance to CFUGs would legitimize the government's collection of CFUG revenues for program purposes (Singh 2002b).

Other CFUGs expressed concern that the taxation policy will have a negative impact on community development activities already supported by CFUGs, and have a long term negative impact on the direct link between forestry development and poverty alleviation programs (Singh 2002b).

<u>May 2000 Cabinet Decision banning felling of green trees</u>
This policy created confusion for DFOs and CFUGs, and varying interpretations were implemented. Clarification was published 20 months later in the Gazette (December 2001) stating that this ban was not applicable to trees identified in the FOPs. The ban was intended to control commercial harvesting (Singh 2002b).

The blanket ban without recognition of the CFUG FOPs or differentiation for forest types or ages is not administratively, managerially, biologically nor economically sound. This style of issuing contradictory and confusing policies has a long term negative impact by undermining CFUG confidence in the MoFSC (Singh 2002b).

<u>2002 Directive: surplus timber sale rates must not be less than the royalty rate</u>
The researcher described the process of timber sales: sales to people outside the CFUG are done through an auction system with public notification and sealed bids. The highest bid above the royalty rate is approved. "*Many users and forestry staff raise the question of transparency in fixing the price of timber. The general users are not involved in it, and price fixing is influenced by few executive members and contractors involved*" (Singh 2002b). (BK's 1999 research activity on timber was conducted prior to this piece of legislation.)

Lessons learned in this research activity are that policies need to fit into the legal framework to avoid confusion, confrontation and distrust, and to build on the progressive foundation of community forestry legislation in Nepal. Issues to continue to focus on: resolution of contradictions in forestry legislation and guidelines; unclear Tarai user identification requires guidelines; targeting ordinary CFUG members being aware of CF constitutions, FOPs, rules, rights and responsibilities; establishing consultative process in policy development; and building strong communication mechanisms for poor households to have access to information (Singh 2002b).

2.4. Summary of Conclusions and Recommendations by Categories

The conclusions and recommendations by researchers are summarized below according to categories of research activities. ANNEX D lists key recommendations offered by each researcher organized by categories.

2.4.1 Active Forest Management and Basic Forest Products

Active Forest Management for Multiple Products

The conclusion of the research on basic forest products is that demand exceeds supply for forest products, and distribution of forest products within the CFUGs is not always equitable, especially for poorer households and especially in CFUGs with mature timber resources. The researchers highlight CFUG members' top priority for basic forest products and second priority for commercialization. The researchers conclude that FOPs need to emphasize active forest management for basic forest products. The research on lopping and litter removal demonstrates a concrete approach for active forest management for multiple forest products.

Grazing Control

Controlling free grazing is assessed as the practice that had the most positive impact on forest regeneration. Recommendations include continuation of grazing restrictions and promotion of complementary practices including: increasing fodder production; nurseries for fodder seedlings; inventory unproductive livestock; and training young herdsmen in grazing management and impact.

Tarai Alternative Energy Sources

In the Tarai, researchers conclude that alternative energy sources are required to meet the deficit in supply of forest products, including: biogas, solar, and Improved Cook Stoves. Bhatta and Lamsal's (2000) CFUG respondents conclude *"they would not be motivated for alternative energy schemes as long as they continue to get forest products from NF. In addition, most users lack the financial capacity to start and provide continuity for the aforesaid schemes."*

2.4.2 IGAs, NTFPs and Biodiversity

NTFP based IGAs Target Poor and Marginal CFUG Members

The researchers conclude that NTFP based IGAs can contribute as one livelihood strategy for women, poor and marginal members of CFUGs, especially if CFUGs make provisions allocating funds targeting disadvantaged households for poverty alleviation activities. The researchers highlight the fact that resource-rich CFUGs tend to have more conflicts than resource-poor CFUGs due to inequities in distribution of benefits. The IGA programming needs to be specifically designed to target the poor and marginal CFUG members.

One of these researchers also recommends complementary programming with NFE to increase participation of women and poor people in CFUG activities, especially with NTFP IGAs. The NFE classes provide a critical forum for people to discuss CF issues and support women and marginalized people to be fully aware and informed about community issues.

The harvesting systems were analyzed and researchers concluded that there are opportunities to train poor and marginal CFUG members in timber and NTFP harvesting skills and to then provide employment during harvesting periods.

Researchers conclude that marketing gaps obstruct potential benefits from forest-based enterprises. On the CFUG level, researchers recommend networking between CFUGs to improve market information access and to gain marketing advantages as a group[7]. Another researcher recommends

[7] Maharjan (unpublished draft 2002) points out that current forestry legislation does not have provisions for CFUGs to cooperatively market forest products.

complementing NTFP production support with chemical analyses to identify market opportunities for NTFPs.

Biodiversity and Ethno-botanical Knowledge
The researchers in the Tarai and Inner Tarai conclude that CFUGs are not benefiting from the valuable ethno-botanical knowledge of the indigenous people, and especially key users such as Baidyas making medicines. Ethnobotanic knowledge needs to be incorporated into CFUG forest management strategies by including secondary users in the CFUGs and training key informants as Local Resource Persons, in sustainable, active forest management.

Specific technical recommendations are offered for active forest management, lopping, litter removal, Tendu management, and Pipla production.

Programmatically, researchers recommend provision of (1) training at two levels: for CFUGs and for the field staff who technically support the CFUGs; (2) regular extension services and technical support; (3) demonstration plots; and (4) strengthened participatory monitoring and evaluation (PM&E) capacity at DFO and CFUG levels.

2.4.3 CFUG Fund Management

The researchers found good improvements in the CFUGs' fund management for fund mobilization, recordkeeping, expenditures and auditing, and a general positive sense that *"community forestry fund mobilization means community mobilization."* The researchers found that auditing CFUG financial records has worked as a good communication and M&E tool. The researchers also found areas with room for further improvement, especially in CFUG timber sales, community development expenditure decision-making, recordkeeping and auditing.

Facilitate Participatory Process to Develop CFUG Fund Management Guidelines
The key recommendation is to facilitate a participatory process to develop guidelines for CFUG fund management specifically targeting participation of women, poor and marginalized households. The process should build on the positive examples of the General Assemblies conducting internal CFUG audits and building up the CFUG PM&E capacity.

Guidelines for CFUG Fund Support to Community Development
Fund management guidelines in terms of expenditures for community development activities are also needed. One suggestion is to create a provision for minimum investment in income generating activities by the CFUG.

CFUG Networking
Another major recommendation is to facilitate more networking between CFUGs to share ideas and skills. The CFUG network can address the issue of loss of continuity in skills and capacity in rapid FUC Treasurer and Secretary officer turnover, identification of auditors, and share ideas for equitable community development activities.

CFUG Credit Loan Research on Benefit Flow
A future research topic is to explore the CFUG credit loan programs and identify which socio-economic or ethnic / caste groups are benefiting from the loan programs.

2.4.4 Governance and Democratic Functioning

Progress towards Governance and Democratic Functioning Indicators
The researcher found good progress in terms of the 14 indicators for CFUGs' governance and democratic functioning. Three indicators were found weak, specifically (1) ordinary CFUG members aware of rules, regulations and rights, (2) dissemination of information on CFUG decisions, and (3) social equity.

Streamline Service Provision by Classifying Clients Needs

At the Community Level, the major recommendation is to focus on equity issues and establish systems for classifying CFUG members and CFUGs in socio-economic categories and CF management capacity categories, respectively, and then focus services accordingly. Program focus should target the poor and marginal households in the community, and the weaker CFUGs.

Private Service Providers

A second major recommendation is to continue and expand the Local Resource Persons/Organization development and training as trainers, focusing on women, poor and marginalized segments of the communities. Central level government guidelines are needed for district level officers to promote the use of Private Service Providers to supplement the inadequately staffed DFOs.

Complement CF with NFE to Reach Women and Poor

Another key recommendation is to link NFE with CF in order to reach women and poor.

DFO Support to Extend FOP Time Period and Improve FOP Quality and Equity

At the District Level, recommendations are to extend the FOP time periods rather than allowing them to expire and obstruct access to CF products. The DFOs should focus on strengthening the weaker CFUGs and improving the quality of the FOPs.

Policy Level Recommendations to Support CFUGs to Contribute to Equitable Community Development

At the Policy Level, recommendations are to focus on active forest management for multiple products, encourage Local Resource Persons/Organizations, develop guidelines for increasing support services to CFUGs, and develop CF indicators including community development indicators and governance and democratic functioning indicators.

Orientation for Local Political Leaders to Minimize Politicization of CF

In terms of political leaders' involvement in community forestry, the recommendation is to provide orientation on community forestry to the local political leaders and minimize politicization of CF.

2.4.5 Impact on Livelihoods, Equity and Gender Issues

Summary Findings

Researchers found that forest conditions after handover as community forests have improved with increasing vegetative growth and cover. However, most researchers found that while the poor and marginalized rural people are more dependent on public or community forests than the wealthier people, poorer households are getting disproportionately lower forest product benefits.

The poorer CFUG members and people who were excluded from the CFUGs are heavily dependent on national forests to meet their basic forest product needs. Researchers found that community forests have been protected at the cost of national forests mostly in the Tarai region.

An indicator for social equity was identified for successful and sustainable CFUGs: to include provisions in the constitution and FOP for secondary users to access forest products from the CF.

Within the CFUGs, inequitable distribution of CFUG benefits was found to be greater in CFUGs with mature forests and valuable timber resources. Researchers attributed the inequitable distribution to domination by elite and wealthy households, low representation of poorer households and low levels of participation in FUC decision-making.

Researchers found the NFE an effective approach for increasing numbers of women and *Dalit* on the FUCs. But concluded that the women and Dalit are never/rarely elected to key positions, and the influential men continue to dominate the FUCs. The trend for all women CFUGs and FUCs is

increasing, also attributed to confidence building from the NFE forum. This is a strong foundation of almost 20,000 graduates from NFE courses, mostly women, and including almost 7,000 *Dalit*.

Researchers found CFUGs allocating about 25% funds to community development activities, in accordance with the Forest Act 1993, including school support, roads/trails, drinking water, irrigation and loan funds. But deeper analysis showed disparity in benefits from community development activities biased towards wealthier households with larger landholdings, with about one-third of respondents reporting economic discrimination.

Policy recommendations: focus on social equity and integrated forest resource development and management; develop indicators for equitable distribution of forest resource benefits; provide clear policy and guidelines for equitable Tarai forestry development, including secondary user identification and provisions for access; facilitate participatory process to develop guidelines for community development; simplify Forest Inventory Guidelines; resolve legal confusion about contradictions in forest policies and directives; and strengthen communication mechanisms.

DFO recommendations: support CFUGs in multiple product, active forest management in order to address basic forest product needs; facilitate conflict resolution and equitable distribution of forest products and benefits; facilitate participatory decision-making about timber and other valuable commercial forest products; facilitate identification of secondary users and designing provisions for CF access; strengthen CFUG conflict resolution capacity; support CFUGs in Participatory Monitoring and Evaluation; and strengthen communications mechanisms.

CFUG recommendations: strengthen communication mechanisms and bridge gap between FUC and members; focus on active forest management for basic forest needs before commercialization; focus on multiple product management in order to address basic forest needs, rather than focusing on timber or other single forest products that benefit a limited socio-economic group of people; establish equitable benefit distribution; establish PM&E capacity; and identify secondary users and design provisions for access.

2.4.6 Support Services to CFUGs

Non-Formal Education

The researchers found the NFE was effective in increasing women and disadvantaged people's confidence to participate in CFUG activities and FUC positions and discussions. This is a concrete, tested approach for focusing on women and disadvantaged households and creating a forum for training and skills development. Program cost was USD$ 6.50 (about NRS 500) per graduating participant.

Complementary recommendations offered by Singh and Nepal 2002a, are to directly link NFE with the CFUG and share FUC decisions and other information with the NFE classes for further discussion. In terms of promoting social change, the researcher recommends expanding the scope of participants to include poor men, ethnic groups, and people from disadvantaged households.

In conclusion, the researchers found that the NFE program complemented the CF program activities and successfully reached women and Dalit households CFUG members, a sub-set of the CFUG that is difficult for the DFOs to effectively reach. The NFE program is a concrete example of alternative local support services to supplement the deficient DFO staffing.

Recommendations are to: build on the successes of the NFE courses complementing CF programming and expand to target more poor and marginalized people; improve arithmetic and writing skills of graduates; develop Community Reading Centers into adult education resources with materials written in local languages or simple Nepali in large type, including CFUG constitutions and FOPs etc; and enrich NFE curriculum with "learning by doing" methodology.

Future research could fill in a gap by analyzing the NFE implementation approaches in terms of identifying who the local implementing partners are, which groups were more and less successful and why, what support they require in terms of training and materials, and potential for networking. Future research could also analyze the participants in NFE, disaggregating for socio-economic and caste groups, and make recommendations how to expand the target to include more poor and marginalized households.

Post-Formation Support

Classification of CFUGs and Training Needs Assessments
The researchers characterized successful CFUGs that are more active and require less Post Formation Support: smaller CFUGs with homogenous community and smaller CF area. The problems encountered in Tarai CF that increase Post Formation Support requirements include: the overall issue of the unclear policies for Tarai CF; user identification; secondary user access to forests; and valuable mature timber that can be commercialized.

CFUG training needs were refined and differentiated for newer compared to more established CFUGs. Recommendation was made to conduct training needs assessments to more effectively address CFUGs needs, rather than blanket training curriculum for all.

Selection of Training Participants and Training Methodology
The researchers found that disproportionately fewer women and poorer CFUG members participated in trainings. It is recommended to apply field based training approach for CFUG training.

CFUG Networking and PM&E
The DFO Ranger Post CFUG networking workshops were found to be effective for CFUGs to share information. The research found that neighboring CFUGs are influential in terms of forest management and community development activities. Networking can also support participatory CFUG monitoring and evaluation.

DFO Training Needs
Based on the forestry legislation, the DFO staff's mandates have been changing from forest protection to active forest management through community forestry and now to community development through community forestry. Training for DFO staff to fulfill their expanding responsibilities is critical for Nepal's forest resources to be equitably distributed. Training in CF in general is recommended to focus on PM&E, conflict resolution and coordination. For the Tarai areas, additional training is required for OFMP revision/preparation; CF per capita size guidelines; NTFPs; FOPs; and alternate energy sources. Training should be offered to DFO staff at all levels.
Researchers observed that the workload for DFO staff has increased and expanded with the evolution of community forestry. The most recent examples are the increasingly technical Forest Inventory required for all new FOPs and renewed FOPs, and the formal link between community forestry and community development for poverty alleviation. Although the workload of DFOs has increased, the staff numbers have not, resulting in inadequate and poor quality support from DFOs to CFUGs.

The research findings on the NFE programming provide a tangible support service that effectively reaches women and poorer, marginalized households, and can supplement the inadequate DFO service system for CFUGs.

2.4.7 Private Forestry and National Forest Management

Private Forestry
The research found private forestry practiced widely, and a positive trend of increasing private forestry development and management following CF handover and enforced restrictions on CF harvesting. The increased availability of seedlings from community-based nurseries helped to expand private forestry. The preferred species were recorded as Sissoo, Bakaino, Ipil-Ipil and teak. The main

limitation for expanding private forestry is land availability. Most private forest owners are larger landowners. Private forestry directly benefits larger landowners, but the increased supply of forest products indirectly benefits the wider community.

Recommendations for private forestry are to: focus on multiple product management; streamline the registration process; and review the disincentives for private forestry and revise.

Future research could analyze the community-based nursery network and make recommendations on the potential for poorer households with small landholdings to establish nurseries for private forestry. CARE's ANR strategy guidelines are to not put further resources in private forestry because it directly benefits larger landowners more than the poor and marginalized. Future program designers should analyze the costs and benefits for different socio-economic groups in activities that directly benefit the wealthier households, but may indirectly benefit poorer households. Future research should identify potential employment opportunities in private forestry or alternative energy initiatives that would directly benefit poorer households.

National Forestry

Insufficient Supply of Basic Forest Products from Community Forestry and Exclusion from CFUG Result in National Forest Degradation

The researchers concluded that community forests have been protected at the cost of the national forest areas mostly in the Tarai regions. There are no guidelines for minimum CF area per capita to supply basic forest products. Deficit supplies result in especially the poorer segments of the communities harvesting basic forest products from national forests. Problems with user identification in the Tarai areas have resulted in traditional users being excluded from CFUG and the handed over CF area, increasing dependence on National Forest areas.

Tarai Community Forestry – OFMP

The Tarai districts were mandated to prepare Operational Forest Management Plans to identify Potential Community Forest Areas. The existing OFMPs were found deficient in terms of lack of process to engage participation of forest users, unclear guidelines for CF so very limited areas were designated as Potential Community Forest Area, and not representing the field reality. Research respondents were found to perceive the OFMP as an obstacle to community forestry handover.

Researchers' key recommendations are to (1) develop an integrated Tarai forestry sector policy with clear and equitable guidelines including Community Forestry as one component, and (2) focus on developing a participatory process for preparing the OFMP to guide user identification and forest management strategies that provide equitable access to forest resources for secondary and tertiary forest users who reside far from forests.

2.4.8 Policy Issues

Summary of Findings

The research activity concluded that community members appreciate the intentions of recent forest policies, but find the contradictory legislation confusing and the lack of fuller communication frustrating. Specifically, the Forest Inventory Guidelines are intended to enable the CFUGs to sustainably manage their forests, but are overly complex for the existing DFO staff to provide adequate support to CFUGs to implement, resulting in FOPs expiring and CFUGs losing legal rights to harvest from the CF. Another example is the taxation of surplus timber sales which is intended to support local community development programs. However, CFUGs are already enthusiastically supporting community development activities that are not acknowledged by the government. FECOFUN filed a case that the taxation contradicts the Forest Act declaring CFUG forest products not taxable. CFUG representatives reported their concern that the arbitrary rate could be increased. In summary, the researcher found that the recent legislation undermines the spirit of community forestry, contradicts existing community forestry legislation and has created confusion and distrust.

Key Policy Level Recommendations

At the policy level, the key recommendation is to focus on an integrated forestry sector as a whole, not just community forestry; but within community forestry, to provide clear guidelines for the Tarai community forestry. The OFMP process should be reviewed and revised to be more consultative in general. The Forest Inventory guidelines need to be simplified and reissued with adequate training to DFO staff and other Private Service Providers to support the CFUGs in FOP preparation.

The second main recommendation at the policy level is reconcile the contradictions in the recent regressive legislation, and build on the strong foundation of community forestry in Nepal. Specifically, develop a legal, progressive, sliding tax scale for CFUGs that acknowledges on-going community development activities and encourages CFUGs' roles in poverty alleviation and local community development.

Key CFUG Level Recommendations

At the CFUG level, the main recommendation is to raise awareness about CFUGs role in community development and poverty alleviation, and that social equity is an objective in CFUG management. The CFUGs require more support technically and socially to be able to prepare more equitable FOPs, focusing on multiple product active forest management. CFUG communication mechanisms need to be strengthened to ensure that ordinary CFUG members are familiar with the constitution, FOPs, rules, rights and responsibilities.

DEMONSTRATION PLOTS

As part of the strategy for transferring forest management techniques and skills, the FPP established a series of 51 demonstration plots for active forest management with 37 CFUGs in the eight districts during the project period (ANNEX E). Demonstration plot objectives include:

- Silviculture treatments of thinning and pruning on trees and NTFPs
- Sal forest management – spacing, coppicing, etc.
- Free grazing / controlled grazing demonstration for Sal regeneration
- Bamboo growth and propagation
- Fodder management
- Management for NTFPs (Pipla)
- Conversion of existing forest into multiple product forest management
- Nursery and tree planting techniques
- Germination and establishment of tree species on barren lands

One of the lessons learned during project implementation and reported by CARE staff, was to use a more participatory, action research approach. In 2001 the implementation approach shifted from a more academic approach to a participatory, action research style. This apparently resulted from an internal CARE review with new staff inputs.

Unfortunately with the insurgency situation, follow up on the demonstration plots was minimal. The two demonstrations that were more closely followed up were the two demonstrations on Pipla management and Bamboo propagation.

From the Pipla demonstration plot, the CFUG learned that Pipla production is better in open canopy forest rather than dense canopy cover, and that Pipla harvest can decrease if harvest is delayed (FPP:Annex 2).

From the Bamboo propagation demonstration, the CFUG learned that single-node cuttings produce quality shoots and high propagation survival, whereas the greater number of nodes results in lower propagation rates and more damage during separation. Insect damage to tender shoots from

vegetative reproduction reduced survival. Seedlings propagated vegetatively require at least 15 months in the nursery to ensure good establishment. The local species "Dhanu Bans" performed the best, followed by Kharse, Chille and Mayar Bans species (FPP:Annex 2).

RESEARCH COMPONENT EVALUATION

There was no formal evaluation of the EFEA at the end of the project, so there was no final evaluation against the indicator of innovations tested and adopted by CFUGs and DFOs. The research papers and documentation on the demonstration plots and this synthesis report documents the innovations that have been tested under the EFEA/FPP applied research component. It was beyond the scope of this report to assess the adoption rates by DFOs and CFUGs.

There was also no formal system of monitoring the adoption of innovations and recommendations generated by the applied research program during the life of project, and no provisions for post-project evaluation. FPP recorded the follow up to the first major research activity by Chhetri and Sigdel in 1999, in the "Action Plan for Post Formation Support" to guide implementation of the research recommendations.[8] Other researchers shared their results with the EFEA/FPP staff through interactive workshops, report distribution, and informal discussions. The FPP staff share anecdotal accounts of adoption of innovative technologies, especially in terms of active forest management and silvicultural treatments.

The applied research activities conducted under the EFEA/FPP generated a substantial body of knowledge about community forestry in Nepal. Throughout the four year period, the researchers have offered strategic recommendations based on the field research findings and identification of programming gaps. One documented example of the applied research component impact on program implementation is the community-based nurseries for locally available seedlings. Chhetri and Sigdel (1999) observed that there were no community-based nurseries in Dang, Bardia and Banke in 1999. By 2001, there were 39 community-based nurseries established throughout the project area providing seedlings to over 3,000 households including 43% Dalit households.

The applied research component strengthened the research capacity of the 28 individual researchers, and also strengthened the capacities of the organizations that coordinated and networked to support implementation of the applied research activities. The applied research component shifted from more academic to a more applied research approach, and helped to bring CFUG members' priorities into research activities.

In addition to the actual knowledge generated through the research activities, there are valuable lessons to be learned from the process of dissemination of research findings and recommendations during the life of the project and afterwards: which recommendations were implemented? What were the formal and informal communication systems that circulated research information? For the CFUGs? the DFOs? the Ministry? CARE? other stakeholders? There is an opportunity during the next couple years to learn from analyzing the actual dissemination patterns of research information from EFEA/FPP.

[8] Undated report "Action Plan for Post Formation Support" by EFEA FPP CARE Nepal. Pgs. 15.

History of Nepal Forest Sector and Laws and Impact on Users

Gregorian Year	V.S. Year	Law / Event	Interpretation	Impact
1750-1800		Gorkhali rulers initiated forest management	Main concern was to maximize revenue flows for benefit of the state and its functionaries, and to prevent unauthorized exploitation of resources. Forest management systems included: birtha, kipat, talukdari and guthi.	
1846	1903		British India extends railway link to Nepali border, opening access to Nepali forest resources to India. (Timber given free of cost to Indian railway sleepers as a contribution to WWI efforts.) Under the Rana regime, forests were under the responsibility of local headmen called "Talukdars" who were functionaries of the state responsible for revenue collection, some for law enforcement, and for controlling access to forest and distribution of forest products. Talukdars were local people with external sponsers.	Massive deforestation of the Terai Sal forests.
1942	1999	Department of Forests established		
1951	2008	Revolution and political overthrow of Rana regime. King Tribhuvan becomes head of government.		
1952/53	2009/10	First policy document	Established 3 Categories of forests, including Community Forests.	Not implemented.
1957	2015	Private Forest Nationalization Act	Objective was to procure back under state control one-third of the country's forests and agricultural lands held under feudal tenure.	Government controlled/managed forests were not properly demarcated or controlled. Nation-wide deforestation. Contradictory information on breakdown of local forest management systems and increased

Gregorian Year	V.S. Year	Law / Event	Interpretation	Impact
				numbers of Indigenous Forest Management Systems immediately after implementation of the Act.
1958	2015	Nepal Malaria Eradication Organization established	Malaria eradication in the Tarai begins.	Massive migration from the hills to the newly malaria free, rich Tarai areas. Hill migrants settle nearer present forest areas, resulting in exclusion of indigenous Tharu communities that live further from their traditional forest areas.
1961	2018	King Mahendra issues proclamation banning political parties.		
1961	2018	Forest Act	Made provision for private forest plots (banbatika) and initiated concept of handing over government forestland to village panchayats for their use.	Nationalized private forests and unleashed rampant harvesting.
1963	2020	Muluki Ain (Civil Code)	Removed caste discriminatory provisions in the Civil Code.	No change in actual discrimination against untouchable castes (15% of total population).
1967	2024	Forest Preservation Act		Provided more powers of offences to Forest Department for enforcement of law and policy
1975	2032	Ninth Forestry Conference organized in Kathmandu initiated formation of national forestry plan.		
1976	2033	National Forestry Plan	Concept of Panchayat Forest allows for forest products to be distributed to local people.	First time in history that the forest service ruled in favor of the peoples' rights.
1977	2034	First Amendment to 1961 Forest Act.	Developed 6 categories of forest in Nepal: panchayat, panchayat-protected, leasehold, religious, government and private. Regulations limited up to 125 has. of government owned forest to local panchayats as panchayat forest (PF). Natural forest areas up to 500 has. of as panchayat protected forests (PPF). No provision for sale of forest products by panchayats.	
1978	2035	Panchayat Forest and Panchayat Protected Forest	* Up to 125 has. Degraded forest/shrub land allowed as PF for plantation and protection. Panchayat fixes price for forest products and notifies DFO; income for forest protection and	

Gregorian Year	V.S. Year	Law / Event	Interpretation	Impact
			promotion; surplus can be sold to other panchayat people. * PPF – up to 500 has. 60% revenue to be shared with HMG. 1979 this was reduced to 25%. Panchayat fixes prices, but cannot be less than royalty rate. * For both PF and PPF, only the annual increment could be harvested and distributed.	
1980	2037	Referendum. Panchayat system retained with minor reforms.		
1982	2039	Decentralization Act	"… it is expedient to decentralize authority in order to enable the people to take decision and make arrangements themselves in matters relating to their day-to-day needs"	Specifically promotes the user group concept as the most effective approach to the development and management of natural resources in local communities and set the tone for legislative development in with the government's willingness to devolve authority to local level.
1984	2041	Decentralization Rules		
1985	2042	Private Forest Regulation (Poudel, IP:10)		
1985	2042	Seventh Five Year Plan	Mentions priority to develop CF approach and fix objective for forestry sector to "fulfill people's daily need forestry products by handing over more forest as CF.	
1988	2045	Master Plan for Forestry Sector (20 years)	"to develop and manage forest resources through the active participation of individuals and communities to meet their basic needs" "phased handing over of all accessible forests to the communities to the extent that they are able and willing to manage them" Community forestry was given first priority over other forest management plans with 47% total budget allocated to community forestry program. Re-orientation of DOF staff for new role as	Pg 18 sect.7.1: Terai policy to handover only isolated, barren shrubland contradicts MPFS. (fits with PF rules). Now trying to limit size and quality of CF. Participants suggest that minimum/maximum forest area per Household should be fixed (NFA, JTRC 2000) CF areas in all districts have improved, perhaps biodiversity has increased – ref. Pg 19)

Gregorian Year	V.S. Year	Law / Event	Interpretation	Impact
			extensionists and advisors.	
1990	2047	People's Movement Constitution of the Kingdom of Nepal	Change to multi-party constitutional monarchy. Envisages that decentralization will empower the nation's people and requires the state to mobilize the nation's natural resources and heritage in a useful and profitable manner for national welfare. Article 26 (4) stipulates that the state will give priority to protecting the environment, taking special measures to prevent further damage due to physical development activities and arranging for the protection of rare wildlife, forest and vegetation.	
1993	2050	Forest Act	Classifies forests as: (1) private and (2) national, with sub-categories of community, leasehold, religious, protected and government-managed forests. Established OFMP for Terai districts. Government Managed Forest – Terai DFO authorized to hand over any part of national forest to users' group as community forest. "notwithstanding anything contained elsewhere in this Act, any part of the national forest suitable to hand over to the users' groups as community shall not be handed over as leasehold forest." CFUGs are "autonomous and corporate body with perpetual succession" CFUGs gain status as autonomous and self-governing body after registration with DFO with	OFMP for Banke, Bardiya and Kailali approved May 1998 (2003 exp). OFMP for Dang prepared 1990, but not implemented properly, nor updated. Pg 19 sect 7.2: "OFMP has become both a helpful guide as well as a barrier for handing over CF." Pg20 sect 7.3: "we are not allowed to extract forest product including small timbers like Halo-Balo for agricultural tools which hampers our basic agriculture work," Sundapur CFUG, Dang. Constraints identified: - CFUG members have no redress against non-members misusing resources belonging to the group. - OP amendments can be diverted towards misuse of resources. - DFO can repossess the forest without intermediate-level punishment (warning) if the CFUG commits mistakes. Shift from instrumental 'technical' community forestry to

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			rights to production, utilization, and sale of surplus forest products according to the operational plan, and generation of user group funds. - Opens possibilities for CFUGs to commercialize forest management and harvest of products. - No stated provision for sharing revenue with HMG Gives CFUGs authority to spend for local community development activities. No guidance provided on amount of land/forest area to be handed over, or criteria for distribution of benefits in Tarai. No change in government ownership of forest lands.	"basic needs' community forestry. Procedural guidelines for implementing the Act. Both provided sound legal and institutional footing to the CFUGs and empowered DFOs to handover accessible forests to the extent that communities are willing to and capable of managing them.
1995	2052	Agriculture Perspective Plan	Advocates for large blocks of Terai forest be managed by DFO for commercial purpose. Fringe areas should be managed as bufferzones under community or leasehold forestry program.	
1995	2052	Forest Regulation	DFO registers the forest users' group and issues a certificate after having a bond to comply with the Act. UG prepares a Workplan, and DFO hands over the forest area as CF.	
1995	2052	Community Forestry Directives	Published according to 1995 Forest Regulation and has a legal binding connection. Cash crops such as tea, coffee, cardamom, etc can be cultivated in community forest.	
1998	2055	Local Self Governance Act	Provides adequate rights to local people over their local resources.	Some contradictions between LSGA and Forest Act and guidelines
1998	2055	Third National Community Forestry Workshop	Endorsed poverty alleviation as a future vision of community forestry.	
1999	2056	First Amendment to 1993	Encourages community development and forest	CF becomes directly linked to poverty alleviation efforts

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		Forest Act	development with "at least 25% of income in forestry protection, development and management, and rest for other community development activities"	Deo (2002):" Forest management changed from exploitative to protective (1998)"
2000	2057	Amendment to CF Directive 1995	Deletes tea and coffee from directive. Technical conditions including growing stock, annual increment and total resource inventory	Community and Private Forest Division updates CF Guidelines 1995 in 2000 and issued the "Guidelines for Inventory of Community Forestry. DFOs strictly enforce inventory rule. Some Rangers having trouble implementing new guidelines because: lack of English language skill, lack of Nepali translation of Guidelines, lack of equipment, training, large number of OP requiring renewal, etc. **"Quality of inventory work is questionable."** Pg 21 sect 7.4: Though the inventory concept is appreciated for sustainable productive management of forests, "the whole process of community forestry is participatory, but these guidelines are traditional," Rangers and CFUGs. High technical requirements of inventory make CFUGs more dependent on technicians. FECOFUN questions legal connection of inventory with Forest Act. REC: simple Nepali version of inventory for CFUGs and DFO staff and technicians; training; balancing inventory with control of forest product harvest abuses. (Bhatta2000) "the recent CF Directive issued from the DOF demands a lot of technical requirements for which the CFUGs are generally not able to fulfill."
May 2000	2057	Cabinet Decision	Ban on felling of naturally generated mature trees for commercial purpose at least for 5 years, specifying that existing demand of timber could	Confusion amongst CFUGs and DFOs. Dec 2001 Gazette notice by MFSC clarified that ban did not apply to tree removal approved in the Workplans.

Gregorian Year	V.S. Year	Law / Event	Interpretation	Impact
			be fulfuilled from present stocks of dead, dying and diseased trees.	Pg 21 sect 7.5: confusion and questionable purposes. RECOMMENDATION: improve timber distribution systems of TCN and DOF.
May 2000	2057	New Forestry Concept for Terai, Inner Terai and Chure Forest Management Following from February 2000 National Workshop on Forest Management of Terai and Inner Terai.	1. Terai and Inner Terai shall have large blocks of forests demarcated as Government Managed Forest for scientific management, and published in the Gazette. 2. Collaborative Forest Management for biodiversity and forest condition improvement. 3. Green trees will not be felled for 5 years for commercial purspose. 4. Terai, Chure and Inner Terai, only isolated, barren, shrublands will be handed over as CF. Annual increment rate … 5. In Chure forest areas watershed management will be promoted. 6. Government Managed Forests will share 25% revenues with DDC for local development, and rest 75% goes to Government Revenue Account. 7. CF will share 40% of revenue from surplus timber sales sold outside the user group.	1. OFMPs for Banke, Bardiya and Kailali have been prepared on contract, without participation of stakeholders, and approved by the Ministry. They are not yet published in HMG Gazette. 2. Collaborative Forest Management concept developed but not shared with stakeholders nor tried. 3. Inconsistency between APP and MPFS regarding Terai/Inner Terai focus on handing over isolated, barren shrublands. Seems to be "revival of previous Panchayat Forest 1978." 4. Technical forest management concepts (inventory for annual increment, etc.) builds on PF and PPF 1978 and forest science for sustainable forest management. 5. Sharing 40% CF revenues from surplus timber sales is "inconsistent with Forest Act 1993 nor other HMG financial rules." Feb 2002 National Workshop on Terai and Inner Terai Forest Management discussed taxation issue. Seems to also build on PPF 1978 rules. Pg 15 sect.6.6: In all 4 districts studied, DFOs are collecting 40% share and 10% VAT for timber sales. Originally shares charged for NTFPs also; however currently NTFPs, including resin, are exempt from paying share to HMG. Originally, share revenues deposited to DFO account. Now goes directly to Government Reveue Account. FECOFUN has filed suit with Supreme Court (May 2000).

Gregorian Year	V.S. Year	Law / Event	Interpretation	Impact
				2057/58 63 CFUGs paid $186,742 + $83,705 VAT. No legal revolving fund established for using collected funds for CF development programs. No information regarding program issued. Pg 22 sect 7.6: CFUGs not opposed to supporting community development and forestry program support from CFUG sales of timber, but concerned about use of funds, arbitrary rates not tied to any system (i.e., Sal forests and immature plantations treated the same; while hill CFUGs not taxed for timber sales.) 6. Ban on green tree felling seems to be an ad hoc decision.
2002	2059	Directive? (check Appendix 3 (nepali))	- Users' groups to submit and get attested the dead, fallen trees and fuelwood remaining in the forest - Surplus timber sales outside the group must not be less than the royalty rate - Transparency - OP not to be amended within 2 years without permission from Regional Director of Forest and DFO	

Based on information from research papers from Singh (2002) and Gentle (2000).

Annex – B (this is in excel file)

ANNEX C

Abstracts of Research Activities by Categories

a) Active Forest Management and Basic Forest Products

1. Dinesh, Yadav. 2002. "Assessment of Fuelwood Supply and Management Status in FUG (A Case Study of Pragatishil Women CFUG in Chailahi VVDC Dang District)." BSc. Institute of Forest Hetauda, Tribhuvan University.

ABSTRACT: To assess and analyze fuelwood availability and consumption pattern in the FUG; and to prepare viable management plan for fuelwood supply and demand in the FUG on sustainable basis. Findings are that the demand for fuelwood exceeds CF supply by ten times. Recommendations given for decreasing demand through improved cookstoves and other alternatives, and increasing supply through more intensive community and private forest management.

2. Gautam, Krishna Hari. 2001. "Lopping Regimes in Community – Managed Sal (Shorea robusta) Forests of Nepal: Prospects for Multiple Product Silviculture for Community Forestry." PhD Thesis for the School of Forestry, University of Cantebury, New Zealand.

ABSTRACT: This PhD level research aimed to contribute to the development of appropriate silviculture for multiple-product management of community forests in Nepal. 2 CFUGs were selected in Dang district for the lopping and litter removal treatment plots. Ethnosilvicultural information was collected from a range of CFUG members during the treatment measurement exercises. The one-year experiment showed that lopping and litter removal increase frequency of regeneration of sal, other tree species, and non-tree life. The researcher found his hypothesis confirmed that the "poor hold more ethnosilviculture knowledge than the wealthy." Local knowledge about forest products and ethnosilvicultural practices suggest that forestry professionals should focus on developing silviculture regimes for multiple forest products identified by users, which can be achieved only through users' participation.

3. Upadhyay, Suraj. February 2001. "A Comparative Study of Grazing Effects on Community Forestry (A Case Study from Ghantadev CFUG of Dang District)." EFEA/BSc (Environment Science) Xaviar Academy (Tribhuvan University).

ABSTRACT: The research activity focused on exploring and identifying grazing practices by comparing free grazing and restricted grazing areas in a sal dominated mixed forest. In free grazing areas, the study found that natural regeneration of trees was completely absent, and biodiversity was significantly lower, especially of palatable species. The soil condition was worse in the free grazing area, especially the humus level. Palatable species for goats/sheep and for cows/buffalos are identified. CFUG members listed merits and demerits of both systems, and although they recognized the negative impacts of free grazing, the lack of alternatives compels them to continue free grazing practices in designated forest blocks. Recommendations are for: CFUGs to focus on multiple species management with an emphasis on fodder species, rather than timber production; nursery production of fodder species; and training of herdsmen to raise awareness and knowledge of grazing impacts and forest management.

4. BK, Nirmal Kumar. 1999. "Harvesting and Utilization of Timber Products in Community Forests (A Case Study from Dang District)." IOF Pokhara, Tribhuvan University.

ABSTRACT: To study the existing timber harvesting and utilization pattern of community forest adopted by user group, and to identify the potential for improvement in these pattern in Dang District. Four CFUGs were surveyed. Descriptions and comparisons of CFUG estimates for timber demand, calculations of standing timber, fallen trees and allowable cuts, based on annual increment of growing

stock, and timber harvesting methods. The discussion of the community market system, timber business, and the CFUG income and expenditures for harvesting timber raises the issue of CFUG expenditures for outside skilled labor. Recommendations focus on technical improvements in forest inventory, silviculture, marketing, post harvest treatment and the FOPs, and on networking between CFUGs for timber marketing and processing. This research identifies concrete opportunities and specific approaches for targeting poor and marginalized to more equitably benefit from CFUG forest management in terms of training local CFUG labor in harvesting and processing techniques and providing employment, replacing outside skilled labor.

b) IGAs, NTFPs and Biodiversity

5. Deo, Ram Kumar. February 2002. "Diversity, User, Indigenous Knowledge and Management of Floral Species in Community Forests (A Case Study from two CFs of Dang District). BSc. Institute of Forestry, Pokhara, Tribhuvan University.

ABSTRACT: The research investigates the diversity and density of floral species and studies the relationships between human populations, cultural values, and plant species diversity in the two sample CFs in Dang District. Applying ethnobotanic research techniques, 130 plant species were identified in association with Sal forests, with their local names, scientific names, plant parts used, and use. The researcher found that the indigenous Tharu people have more ethnobotanic knowledge than migrants, but migrants are in the majority in the CFUGs. So these Tarai / Inner Tarai CFUGs are not aware of the use or value of potential NTFPs. The researcher found a provision developed for secondary forest users to have access to basic forest products through coupons/tickets. Community forest users identified priorities for technical assistance and support in multiple product forest management, including refinement of the system for giving access to forest products to secondary users.

6. Chaudhary, Pramod Kumar. February 2001. "Women's Role in Extraction and Utilization of Non=-Timber Forest Prodcuts in Community Forests towards Resource Sustainability." BSc. IOF Pokhara, Tribhuvan University.

ABSTRACT: The objective of the study was to assess women's role in the extraction and utilization of NTFPs in two CFUGs in Salyan District. 32-36 NTFP species were identified in the 2 CFs, but only Timur (*Zanthoxylum armatum*), Chiuri (*Bassia butyracaea*), Sugandhwal (*Valleriana wallichii*) and Pakhanbed (*Bergenia ligulata*) were being marketed. NTFP density was surveyed for main species, and the CFUG members reported vigorous regeneration of NTFPs after the CF was handed over, grazing was restricted, and nursery production of NTFP seedlings for enrichment planting was done. The researcher observed that Timur production decreased in CF with restricted grazing due to natural plant succession. Ethnobotanic information about NTFP utilization are described. Poor CFUG members are more involved in NTFP harvesting than middle, while the sampled respondents of the rich did not harvest. Timur is harvested by contractors with hired labor, both male and female. Women were found to be significantly involved with NTFPs in the CFUGs, specifically in the NTFP marketing, extraction, nursery operations, plantation, CFUG Annual Meeting and CFUG Executive Committee, in descending order of magnitude.

7. Devkota, Rosan. December 2000. "Income Generating Activities through Non-Timber Forest Products." BSc. Institute of Forestry, Pokhara, Tribhuvan University.

ABSTRACT: The research found NTFPs contributing more to income than other forest products. The survey of three CFUGs in Kailali district assessed on-going NTFP based income generation activities including Rattan (*Calamus tenuis*), *Citronella*, Khar grasses for thatching, enrichment plantings for fuelwood production and sales, traditional handicrafts. Respondents from the 3 surveyed

CFUGs ranked IGAs, in combined order of preference: vegetables, bananas, rattan, bamboo, and citronella. The CFUG with majority Tharu ranked vegetables and bananas higher because the forest condition is poorer, they had more agricultural resources, and benefits were higher. The researcher investigated CFUG institutional development and identified three factors for successful CFUGS: 1) good communication linkage between Executive Committee and members, 2) more mature CFUGs have better representation of women, poor and marginalized, and 3) perception of equity in distribution of benefits. The more resource rich CFUGs had higher level of conflict within the group. Recommendations are to provide technical training in NTFP enterprise development with target to more equitably benefit poor and marginalized CFUG members, to support incorporation of NTFP IGAs into the Forest Operation Plans, and to develop Participatory Monitoring and Evaluation systems.

8. Regmi, Binod. 2000. "Autumn Floristic Composition and Conservation Strategy for Non-Timber Forest Products in Bardia District." BSc IOF Pokhara, Tribhuvan University.

ABSTRACT: To explore the autumn floristic composition of non-timber forest species in community based forest and government protected forest, and to compare the factors favorable for plant diversity in these forests. Methodology included vegetative survey comparing 3 CFs and 3 Government Managed Forests (GMF), and homestay with Tharus to learn ethnobotanic knowledge from key informants. NTFP diversity was found to be less in CF than GMF due to CF annual grasscutting and cleaning operations obliterating the "disturbance gradient" found in GMF where species variation is influenced by location near the forest edges with more grazing pressure and sunlight, transitioning to the forest center with less grazing pressure and less sunlight. Pipla (*Piper longan*) found regenerating in areas of maximum grazing pressure in GMF; therefore is identified as a good species for CF with grazing areas. Recommendations include: appreciation for the key informants, like Baidyas; systematic collection of local ethnobotanical information; training key informants in sustainable harvesting and management; and establishment of demonstration plots for multiple product forest management, including potential NTFPs for this area: bet, kurilo, sikakai and pipla.

9. Paudel, Dev Raj. July 1999. "Tendu Leaves as Source of Income for Community Forest Users (A Case Study of Three Community Forests from Banke Distrcit)." Institute of Forestry, Pokhara, Tribhuvan University.

ABSTRACT: To assess the management system, and collection and utilization pattern of Tendu leaves (*Diospryros spp.*) used for bidi production. *Diospryros* is a medium sized tree with a range from western Nepal to Orissa; root suckers are abundant; seed dispersal depends on fruit bats and hornbills; young seedlings require moderate shade gradually shifting preference for more sunlight; and the long taproots prefer direct planting rather than transplanting. In the 3 sample CFUGs surveyed in Banke district, although no scientific management of Tendu production was found, there was vigorous natural regeneration. The short harvest season occurs during one month just prior to the onset of monsoon. Some FOPs now include regulations for tendu harvesting to avoid damaging trees. Average income is 2,700 rupees per household per year (1-1.5 month harvest season). There is a chronic shortage of tendu leaves for the bidi factories. Management recommendations are to stop harvesting from small saplings. Coppice management is recommended to improve quality and quantity of production.

c) CFUG Fund Management

10. Ghimire, Kabita. December 2000. "Financial Management System of Community Forest Users Group: A Case Study from Banke, Bardia, and Dang Districts: Nepal." CARE Nepal and Indian Institute of Forest Management, Bhopal.

ABSTRACT: The research assesses different aspects of fund management systems of CFUGs by surveying 22 CFUGs in three districts: Banke, Bardia and Dang. CFs ranged from 0.02 – 3.4 ha/household, with the 7 all women CFUG ECs averaging 0.02 ha/household. Overall, the research concluded "fund mobilization in community forestry means community mobilization." Good graphic presentation of CFUG sources of income and expenditures. 36% income is from forest products with almost 70% from timber in these predominantly Tarai CFs. Fuelwood earns 20% income, while grasses, nursery, NTFPs also contribute. Income from other than forest products constitutes about 20% annual CFUG income, consisting of grants, loan repayment, interest payments, membership fees, secondary user access fees, and fines/penalties. CFUG expenditures average 40% for CFUG institutional development, 28% forest protection and development, and 24% for community development. The primary community development activities include 52% for credit and loans, 28% for schools 10% for roads, and grants and drinking water. The DFO Banke has issued a directive to stop loan activity, based on the finding that it does not help the group increase its fund. Recordkeeping training has helped improve CFUG Treasurers' capacity. The researcher recommends that trained EC members stay in their posts longer than one year. The practice of CFUG auditing has increased transparency, although there is no mechanism of the DFOs cross-checking audit reports. The Range Post level Networking Committees in Dang supported CFUG auditing, while in Banke, the DFO helped identify auditors. In Bardia, the FUC identified the auditor themselves. EFEA has improved fund management and increased transparency, despite the continuing dominence by elite. Women and DAG's participation in decision making for CFUG funds is negligible. The researcher also observed that neighboring CFUGs exert significant influence, so networking should be supported.

11. Bastakoti, Rishi Ram. 1999. "Fund Mobilization and Financial Management in Forest Users Group (A Case Study from Dang District)." BSc. Institute of Forestry, Tribhuvan University.

ABSTRACT: This research focused on fund mobilization and financial management of 4 CFUGs in Dang district. CFUGs generate funds from: sales of forest products (including saw logs, poles, Khair wood, fuelwood, thatch grasses and fodder grasses), nursery sale of seedlings, molasses grass seed sales, membership fees, fines/penalties and grant support for demonstration plot management. Developing water sources combined with watershed protection is identified for potential CFUG income generation. Major expenditures are for: forest protection (forest guard salaries), administration, forest management, nursery management, Kanji house for impounding free grazing livestock, credit loans, ceremonial days, community welfare (emergency funds, training courses for women) and community development (including drinking water, irrigation, trails, school support). The existing auditing system is diagramed in a flow chart from: internal audit by FUG; to General Assembly for comments and approval; final auditing by registered auditor; and reporting to DFO when required. FOPs do not contain provision for income generation and marketing. Generally, the FUG recordkeeping and financial management are weak, with limited reporting between FUG and DFO. Concludes that FUGs are able to determine local problems and develop solutions, although at the same time the researcher finds that women and DAGs are not included in FUG decision making processes.

d) Governance and Democratic Functioning

12. Singh, Bijay Kumar and Santosh Mani Nepal. September 2002. "Study on Democratic Functioning of Community Forestry User Groups in Forestry Partnership Project Area." Nepal Foresters' Association.

ABSTRACT: The objective of this research activity was to assess the changes and progress in democratic functioning of CFUGs and to document the baseline for future program design. The research involved 32 CFUGs in five districts representing hill and Tarai CFUGs. 12 were indicators defined in the technical proposal, and two indicators regarding internal communications and social

equity were added. Generally performance was considered satisfactorily heading towards democratic functioning. The research found that 67% CFUGs are following their FOPs although they are still overly dependent on DFO staff for official processes and the FOPs emphasize protection and timber sales rather than active management for multiple forest products which would more equitably benefit the poor. In the EFEA area, the trend is to form more all women CFUGs to increase women's participation in CF, although the households tend to be registered in the male's name and therefore CFUG voting is limited to the male household member. 61% CFUGs are holding more regular meetings to deliberate issues openly and about 70% CFUGs are making decisions through consensus. However, the influential people still dominate. 70% decisions are documented more regularly, increasing transparency. But some CFUGs have no system for information dissemination. 66% CFUG committees include representation from all stakeholders, particularly women, poor and Dalit, although the poor are indirectly discouraged from participating because their comments are not incorporated into decisions and the opportunity cost of attending a meeting is a day's wages. CFUG communication processes are rated at 66% but there are no women involved in formal CFUG internal communication systems. The three indicators that the researchers found little progress are: (1) ordinary CFUG members are aware of rules, regulations and rights, (2) key CFUG decisions are not posted nor are copies provided to the NFE classes for discussion, and (3) social equity: distribution of forest products and selection of community development activities are biased against the poor. The recommendations are to focus programming inputs more specifically: at the CFUG level, classify users into socio-economic and target the poor; at the district level, classify the CFUGs and target the weaker ones for more intensive support. At the policy level, develop national level indicators for CFUG democratic functioning, and encourage development of Private Service Providers to supplement the DFO services.

13. Acharya, Bishnu Prasad. February 2002. "The Role of Local Political Leaders in Community Forest Management." BSc (Forestry) Institute of Forestry, Tribhuvan University.

ABSTRACT: The objective of this research was to assess the role of local political leaders (either elected or affiliated to different parties) in community forestry development. Three CFUGs were selected in Salyan (mid-hills) and Makwanpur (inner Tarai) for case studies. The three CFUGs represented different levels of political composition: politically homogenous, mixed and one "more or less" influenced by politics. All three CFUGs did not show any biases in benefit distribution based on political affiliations and ideology. Underlined the importance of sincere involvement of local political leaders in CF, the researcher recommends more training for local leaders in CF laws and regulations.

e) Impact on Livelihoods, Equity and Gender Issues

14. Bushley, Brian. July 2002. "User Perceptions of the Impacts of Community Forestry on Community Development in Nepal's Western Tarai Region". CARE Nepal.

ABSTRACT: The objective of this research activity was to assess the impact of community forestry on community development at the CFUG and household levels in 10 CFUGs in 3 Tarai districts. The research found that households perceive economic benefit from CF in terms of increasing basic forest products available and decreasing collection time. However, the distribution is not perceived to be equitable, and no secondary economic benefits were identified. Grazing restrictions have decreased the number of livestock households can keep. Socially, the ordinary users feel the CFUGs are operating more and more democratically, but a high proportion of women, poor and marginalized feel poorly informed about the CFUG, and are under- represented on the FUC and in training activities. In terms of forest condition, CFUG members feel that it is improving due to their CF management efforts. But many reported a continuing reliance on National Forest resources, and also on the DFO and project staff for support in long term forest management planning. The researcher found that community development activities are minimal compared to the needs and the opportunities, and

recommends a process of community development needs identification and guidance for earmarking a portion of CFUG funds for community development.

15. Paudel, Mani Ram. 2002. "An Assessment of Community Forestry on Sustainable Rural Livelihood (A Case Study from Sher Khola Community Forest User Group, Pyuthan)." Institute of Forestry/EFEA.

ABSTRACT: This research activity assessed the contribution of community forestry to sustainable rural livelihoods in one mature CFUG in Pyuthan District. The researcher concludes that poor are benefiting more from basic forest products, but the data analysis of alternative sources for basic forest products is not clear. The CFUG offers limited opportunities, primarily for forest watchers. The CFUG has supported community development activities, including construction of a CFUG office building that is given out for rent to generate income, trails, drinking water and loans for income generation activities such as small livestock rearing. However, the research found that "income level of poor people has not increased."

16. Ghimire, Loknath. 2002. "Assessment of Impact of Community Forestry on Rural Poor." BSc Institute of Forestry, Tribhuvan University.

ABSTRACT: The objective of this research activity was to assess the socio-economic impact of CF on rural poor in three mature CFUGs of the poor Deukari valley in southern Dang district. The cost benefit ratio analysis shows that the current forest management and distribution system favors the medium socio-economic category of households within the CFUG while the poor realize the least benefits, primarily due to the timber distribution system which is based on cash sales. Correspondingly, the research shows that the medium households with 69% of the FUC positions dominate leadership, while poor have 18% and DAGs have only 5%. The economic polarization of forest resources is biased toward the richer households.

17. Kafle, Prem Kaji. February 2001. "Equity Issues in the Tarai Community Forests of Nepal (A Case Study in Dang District of Nepal)". Dissertation report towards BSc Forestry, Institute of Forestry, Tribhuvan University.

ABSTRACT: This research activity explored equity aspects of community forestry in two CFUGs in Dang District. Inputs of voluntary labor from CFUG members are required for silviculture operations and forest protection. Outputs are shared based on the rules and regulations of the CFUGs for forest product distribution. Both of the sampled CFUGs sell forest products for cash rates, with no distinction between socio-economic groups. Both CFUGs have supported community development activities. In the sampled resource-poor CFUG there were no complaints about distribution of direct forest product benefits and community development activities. In the resource-rich CFUG, "most of the users say that the system is not transparent and allocation of funds is not equitable."

18. Gentle, Popular. 2000. "The Flow and Distribution of Community Forestry Benefits: A Case Study from Pyuthan District, Nepal." University of Cantebury.

ABSTRACT: This research activity was in partial fulfillment of a Masters in Forest Science from the University of Canterbury, New Zealand. The objective was to assess the contributions of community forestry to poverty alleviation by evaluating the flow and distribution of community forestry benefits to different economic and social strata of people in the study areas. Research was carried out in four CFUGs in Pyuthan district, representing mid-hills community forestry user groups. Generally research confirmed that poor and DAGs depend more on public and community resources than richer, non-DAG people who have more private land and other resources. After handing over CF resources, dependence on PF and NF resources increased. Research findings confirmed hypotheses showing poor and DAG access to forest products decreased after CF handover. Restrictions in CF negatively

impacted poor and DAG livelihoods depending on forest resources (fuelwood sellers and kamis depending on charcoal). Poor and DAG are not fully represented in CFUG committees, and never hold key positions, therefore have less influence and access to information regarding CFUG decision making. Recommendations are to improve the CF policy, implementation strategy and approaches to maximize CF benefits to poor and disadvantaged groups. Specifically, changes are recommended to diversify forest product management approaches, incorporate voices of poor and DAG in CF decision making, review handover process, address subsistence needs before commercialization, target empowerment and awareness program to poor and DAG, generate guidelines for CFUG fund utilization, and support further research.

19. Takimoto, Asaka. February 2000. "Impact of Community Forestry in Banke and Bardia Districts of Forestry Partnership Project." CARE Nepal.

ABSTRACT: The objective of this research activity was to assess the impact of FPP activities by interviewing 100 households in 17 CFUGs in Banke and Bardia districts of the Tarai. Field officers from DFO and CARE were interviewed separately, and the household interviews were conducted without DFO staff present to influence responses. Most surveyed households and officers stated that the forest condition has improved, and basic forest products are more available. However, the DFO officers cautioned that the community forests are being protected at the cost of the national forests. Some respondents indicated that the community forest restrictions have decreased availability of forest products. The researcher also had informal discussions with non-CFUG members, and noted that Tarai community forest user identification excludes traditional forest users. It was observed that DAGs are generally worse off than non-DAGs, and women and DAGs show less awareness and knowledge, indicating that they have had less opportunity to participate in the training and awareness programs.

20. Klatzel, Frances. 1999. "Forestry Partnership Program: Tarai communities are managing their forest resources with the support of the District Forest Office and CARE Nepal." CARE Nepal.

ABSTRACT: Four case studies on Tarai CFUGs supported under FPP demonstrate the potential for Tarai community forestry to improve Tarai forest management and contribute to rural community development. Four CFUGs' (in Banke and Bardiya districts) forest management strategies are surveyed, bringing out the complex issues of Tarai forest user identification, potential community forest area designation, and the high commercial value of mature Tarai forests. Beyond forestry, FPP supports development of democratic processes at the local level in the CFUG by training and supporting participatory approaches and conflict resolution practices. Concludes that indicators of successful Tarai CFUGs are: equity in meeting members' basic needs; provision for non-members to have access to CF on fee basis; improved skills of members in administrative and forest management, including NTFP and income generation skills; alternatives for fuel including biogas and improved cookstoves; and information dissemination in local languages or neo-literate level Nepali. There is a strong demand for more forest areas to be handed over for community forestry.

f) Support Services to CFUGs

21. Bajracharya, Keshar Man, Uprety, Hima Devi, Ashika Shrestha. Sept 2002. Impact of Non-Formal Education (NFE) Program o Community Forestry Development (in Kailali, Banke, Bardiya, Dang and Pyuthan). Nepal Foresters' Association (NFA) to CARE Nepal.

ABSTRACT: The objective of this research activity is to contribute to strengthening women's participation in community forestry development by assessing impact of non-formal education classes in 30 CFUGs in five districts. FPP supported non-formal education classes graduating over 20,000 women through over 1,000 NFE classes. The NFE courses were found to be well planned and designed in terms of content and timing/seasonality, covering literacy, numeracy and conservation

education. Women gained confidence as they gained literacy and knowledge. The NFE courses supported the growing trend of forming all-women CFUGs that tend to be highly democratic and transparent. In the homes, the NFE classes had positive influence on improving sanitation, hygiene and family health. Therefore, the course materials were assessed as appropriate and relevant. However, writing, reading and arithmetic skills were not improved as much as verbal skills. 50 Community Reading Centers were established but are underutilized because the women have little time to use the facilities, and the reading material are in difficult-to-read small print. The lesson learned is that NFE has a significant positive impact in increasing women's participation in community forestry. The NFE courses provide the forum and opportunity to focus "learning by doing" training in community forestry management and IGAs for women and poor to more equitably participate and gain from being CFUG members.

22. KC, Sher Bahadur. February 2002. "Post Formation Supports for Community Forest User Groups for their Sustenance (A Case Study from Pyuthan District, Mid-western Region, Nepal)." BSc. Forestry from Institute of Forestry, Tribhuvan University.

ABSTRACT: To find out the existing Post Formation Support system in the study area, and the actual PFS requirements of CFUGs with a sample of 3 CFUGs in Pyuthan district. CFUGs' requirements for PFS gradually decrease as the group matures. PFS areas include: technical forest management, administrative and financial management, training and action research in extension, income generation and marketing, community resource management and development, information and communication, and monitoring and evaluation. The increasing demands on DFO staff for Post Formation Support without proportionate increases to DFO staff resources results in insufficient and / or poor quality Post Formation Support from DFOs to CFUGs.

23. Chhetri, Ram B., and Harihar Sigdel. May 1999. "Study on Post Formation Supports for Community Forest Users Groups: Comparing the Hills and the Tarai." CARE Nepal.

ABSTRACT: The objective of the research was to assess the Post-Formation Support needs from the perspectives of the DFO / project staff and the CFUG members sampling 76 CFUGs in 7 EFEA Hill and Tarai districts. The overall issue of unclear Tarai Community Forestry guidelines is identified as a major constraint for DFOs and CFUGs. DFO and project staff identified the need for training existing staff in PFS areas, and the need for additional staff members to respond to the increasing demands for PFS from CFUGs. For CFUGs, PFS requirements include: (a) technical capability in terms of propagation, harvesting and management of forest resources, (b) democratic functioning within the CFUGs, (c) equity issues (decision making, cost/benefit sharing). Recommendations for post-formation support trainings are offered in a framework differentiating for Hills and Tarai, and for staff and user group members.

g) Private Forestry and National Forest Management

24. Budhathoky, Pradeep. February 2002. "Impact Analysis of Community Forestry on Private Owned Forest (A Case Study of Dang District)".

ABSTRACT: The research objective was to explore the overall impact of community forestry on private owned forest (PF) by comparing one resource-rich (RR) CFUG with a resource-poor (RP) CFUG in Dang District. Forest product collection sources varied according to product rather than resource status: fodder collection for both RR and RP CFUGs was higher from PF than CF; whereas fuelwood collection was higher from CF than PF. For timber, the RRCF is mature enough to harvest trees, whereas the RRPF and all RP forests do not yet have mature trees for timber harvesting. Both CFUGs indicated a trend of increasing PF because the CF areas are restricted, and for future CF benefits. The constraint of landholdings for RP CFUG members is reflected in the higher dependence, almost double, on National Forest resources compared to RR CFUG. Recommendations

are presented for private, community and national forest development, including development of a provision for district-based forest product distribution system for people living far from forests.

25. Bhatta, DD. and R.P. Lamsal. December 2000. "Impacts and Implications on National Forests by Community Forest User Groups (A Case Stufy od Banke and Bardiya Districts)." EFEA/CARE Nepal.

ABSTRACT: The objective of this research was to examine CFUG member forest product collection activities outside their CF in order to better understand the pressure and level of dependence on nearby National Forests for subsistence forest products. Four CFUGs in Banke and Bardia were selected on the basis of proximity to National Forest areas. The research found that there are no guidelines for user identification or minimum forest area provided to community forests. The sampled CFUGs' user identification were not properly done and the CFUGs changed their user memberships. Though the CF areas per capita range from 0.33 – 1.54 ha/household, technical management skills are inadequate to supply forest resources, and demand exceeds supply. All CFUG members report dependence on NF to supply at least some of their forest product needs. The main recommendation is for an integrated forest sector approach with specific Tarai CF policy guidelines, including provisions for users residing far from the forests.

26. Nepal, Prakash. 1999. " Survey of Private Forests: A Case Study of Two Municipalities in Dang District." IOF BSc student.

ABSTRACT: The study looked at private forestry development in Dang district by surveying 14 private forests. Only 173 (8%) private forests are registered in the district compared to over 2,000 individual farmers who collected seedlings for private planting in their unregistered private forests. Multi-purpose species planting in PF reduces pressure for those forest products from CF and NF. PF development is directly correlated to landholding size. None of the sample PF owners had less than 2 bigha land, and more than 50% had more than 4 bigha. The main motivation for private forestry is profit; the preferred species for planting are Sissoo, Ipil-Ipil, Bakaino and Teak. No gender differentiation in species preference found because women are only very marginally involved with PF.

27. Poudel, I.P. 2000. "A Case Study Report of Status of Private Forestry in Bardia District." (Assistant Forest Officer) EFEA.

ABSTRACT: The case study objective is to understand the status of private forestry in Bardia district by looking at a random sample of the 43 registered private forests plus unregistered private forests. The research found that farmers benefit with daily required forest products from PFs, including more than two-thirds required fuelwood. The preferred species are Sissoo, Bokaino, Ipil Ipil and Teak. Average landholding size of PF owners is greater than 2 Bigha Riceland plus more than 6 Katha Upland. The major source of motivation to farmers for private forest planting is local NGOs, readily available seedlings, and surrounding CF. The major constraints for expanding PF are limited private landholdings, and a long, cumbersome bureaucratic procedure for registration with no stated advantages.

g) Policy

28. Singh, Bijay Kumar. Under Dr. KM Bajracharya. July 2002. Impact Study Report on New Policy in Community Forestry with reference to Banke, Bardia, Kailali, and Dang Districts. Nepal Foresters' Association (NFA).

ABSTRACT: The objective of this research activity was to assess the impact of recent community forestry policy changes on CFUGs and other stakeholders with a sample of 20 CFUGs in Tarai and

Inner Tarai districts of Banke, Bardia, Kailali and Dang. The research investigated the impact of the May 2000 New Forestry Concept for the Tarai, Inner Tarai and Chure Forests; the May 2000 Cabinet Decision banning felling of green trees; the 2000 Amendment to the CF Directive (1995); and the 2002 Directive that surplus timber sale rates must not be less than the royalty rate. The research found that users perceive the Forest Inventory requirement and guidelines as positive tools, but require simplification of the Forest Inventory process so that FOPs do not expire and thereby blocking CF use. Users have negative impressions regarding the 40% share to government on surplus timber sales; limitation to isolated barren shrublands for Cf; the constraints of the OFMPs; and the ban on felling green trees for the next 5 years. Lessons learned are that policies need to fit into the legal framework to avoid confusion, confrontation and distrust; Tarai user identification is still unclear and without necessary guidelines; ordinary CFUG members need to be aware of CF constitutions and FOPs; policy changes require stakeholder consultation; and the lack of communication systems creates confusion. Recommendations offered at policy and user group levels.

Annex - D